Diachronic and Externally-Scaffolded Self-Control in Addiction

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1. Introduction

Say that Simón and Paula are planning to go to a night club, and both have strong reasons to refrain from drinking alcohol that night. When the time comes, Simón feels a strong desire to have a drink and effortfully inhibits the impulse to get one. Paula, anticipating that she will feel the urge to have a drink once she finds herself at the night club, decides to take some preemptive measures. She leaves at home all payment methods and recruits the help of a friend to watch her closely and remind her of her commitment in case she attempts to get a drink by other means, and eventually manages to go through the night without having one. Did Simón and Paula both exercise self-control?

Synchronic intrapsychic strategies are clear instances of self-control. Opinions diverge, however, when it comes to diachronic and externally-scaffolded strategies that agents use to promote goal-congruent behaviors. Defenders of the *restrictive view* identify exercises of self-control with synchronic intrapsychic processes and argue that diachronic and externally-scaffolded strategies are not proper instances of self-control, but clever ways to avoid the need to exercise that ability (Baumeister, 2014; Holton, 2009; Levy, 2017; Sripada, 2020). In turn, defenders of the *inclusive view* of self-control typically argue that we should construe self-control as more than effortful inhibition, and that, on grounds of functional equivalence, all these diverse strategies might be properly described as instances of self-control (Duckworth et al., 2016; Gillebaart & de Ridder, 2015; Heath & Anderson, 2010; Hofmann & Kotabe, 2012; Koi, 2021; Mele, 1987, 2003; Vierkant, 2014).

In this paper, I take a fresh look at this debate by focusing on cases of addiction[1]. I argue that addicted agents face a paradigmatic sort of self-control challenge, which makes addiction an important test case for theories of self-control. And I discuss evidence that highlights both the unreliability of synchronic intrapsychic strategies and the crucial role that is played by diachronic and externally-scaffolded strategies in successful attempts at achieving abstinence by addicted individuals. Abstaining addicts are a paradigmatic example of agents who successfully exercise

[1] I will only discuss here cases of drug addiction, but the view I put forward may be relevant to other sorts of addictions as well if there were any. As for the term 'drugs', I will use it liberally to refer to whatever substances may be the target of addictive behavior, thus including alcohol, nicotine and other substances not necessarily referred to as 'drugs' in everyday discourse. There is a good deal of stigma surrounding addiction, and the labelling of a person as an addict often involves a negative appraisal of her behavior or her character. I wish to imply neither of those things.

self-control, and they mostly do so by relying on diachronic and externally-scaffolded strategies. This, I argue, lends further support to an inclusive view of self-control.

The plan for the paper is as follows. In the next section I introduce the concept of self-control and the distinctions between the different sorts of strategies that agents might resort to, and then in section 3 I lay out the main arguments for restrictive and inclusive views. In section 4 I argue that addiction is an important test case for theories of self-control, and I then review the relevant evidence about self-control strategies in addiction in section 5. Lastly, in section 6 I look into two important objections that may be raised against my account by a defender of a restrictive view.

2. Varieties of self-regulation

2.1. Self-regulation and self-control

Humans are planning agents. We define goals for ourselves, whether these be short-term or overarching plans for our lives, and we strive to achieve those goals with various degrees of success. *Self-regulation* refers to the process whereby people adopt various goals and standards for their behavior —and maybe also for their thoughts and feelings— and seek to approximate conformity with those goals and standards (Fujita, 2011; Inzlicht et al., 2021). This is typically a dynamic process, whereby we monitor progress towards our goal and make necessary adjustments to promote success. It is also typically a complex process, as it involves decision-making, planning, implementation, and monitoring leading to further actions.

Attempts at self-regulation may or may not lead agents to experience motivational conflicts. When they do, the need may arise to exercise self-control. Consider again Simón and Paula from our opening case. Both hold the evaluative judgement that they should refrain from drinking alcohol that night, and yet both feel strongly inclined to do so. These courses of action are, moreover, incompatible with one another. To ensure that they act in line with their avowed policy and commitments, they will likely need to exercise self-control.

Self-control may be defined as the ability to align one's behavior with personally valued goals and standards, when faced with the relevant kinds of motivational conflict (Amaya, 2020; Mele, 1987). Thus, self-control is called for in some attempts at self-regulation, but not all cases of self-regulation necessarily involve self-control, as they need not necessarily lead the agent to experience the relevant kind of motivational conflict.

These motivational conflicts —otherwise called *self-control dilemmas*— involve a pair of conflicting elements that may be characterized in different ways. The psychological literature on self-control usually frames these as conflicts between a behavioral tendency that promotes the attainment of a smaller reward to be obtained sooner, and another behavioral tendency that seeks a larger reward (as assessed by the same agent) to be obtained later (e.g., Gillebaart & de Ridder, 2015; Levy, 2017; Mischel et al., 1989; Trope & Fishbach, 2005). Other theorists prefer to frame the relevant conflict as arising between some of the agent's current preferences or

inclinations, and her standing, previously formed practical commitments (e.g., Ainslie, 2001; Ariely & Wertenbroch, 2002; Holton, 2009). A third way in which self-control dilemmas may be characterized is as conflicts between some of the agent's motivational states (such as her desires, emotions, urges, inclinations, among others) and her evaluative judgements or her values (e.g., Kennett, 2013; Mele, 2018; Sripada, 2014). Though in what follows I will mostly use the language of desire/judgement conflict to refer to self-control dilemmas, my arguments are meant to apply to the other ways of framing these conflicts as well[2].

2.2. Synchronic versus diachronic, intrapsychic versus externally-scaffolded strategies

People use different strategies to promote goal-congruent behaviors in the face of motivational conflicts. As mentioned before, there is disagreement over whether all or only some of these are properly regarded as *self-control* strategies. I will turn to that debate in the next section. For the moment, let us look at what some of the relevant strategies are.

A first important distinction concerns strategies that are synchronic and those that are diachronic (Kennett & Smith, 1996). *Synchronic* strategies are those that are meant to deal with a presently experienced motivational conflict, while *diachronic* strategies involve actions taken in advance of a motivational conflict that the agent anticipates might occur in the future. Consider again Simón and Paula. Simón's strategy seems to be purely synchronic, as he takes action to resist the temptation to order a drink then and there when the temptation hits. Paula's strategy is different in that regard, since it involves an element of diachronic planning and action. She anticipates the self-control dilemma she will experience while at the bar, and she takes appropriate actions to confront that challenge before the temptation to have a drink arises[3].

Effortful inhibition of wayward impulses is also a paradigmatic case of an *intrapsychic* strategy. These are the strategies that rely solely on the agent's own internal processes. When Simón feels the inclination to have a drink, he makes a deliberate effort to resist the temptation to act in accordance with that inclination. He is not relying in anything beyond his own psychological processes in order to do that. By contrast, *externally-scaffolded* strategies involve the recruitment of different sorts of environmental resources —including, crucially, other people— to promote goal-congruent behavioral outcomes. Paula's strategy fits this description. Another classic example is Ulysses' asking his fellow seamen to tie him to the mast in anticipation of the encounter with the Sirens.

A couple of important notes before moving forward. First, the combination of these two distinctions gives rise to four distinct kinds of possible strategy categories. Effortful inhibition is a paradigmatic example of a synchronic intrapsychic strategy, but synchronic strategies may also

[2] This is not to say that these different ways of characterizing self-control dilemmas are actually equivalent. Indeed, there are reasons to think that they are not, as it seems at least conceptually possible for these different sorts of conflict to dissociate.

[3] It has been suggested that synchronic self-control involves something of a paradox, as the very possibility of an act of synchronic self-control might seem inconsistent with the *prima facie* plausible folk-psychological 'law' according to which agents do what they are most motivated to do (Haas, 2020; Kennett & Smith, 1996; Mele, 1987; Sripada, 2014). I will for present purposes simply assume that synchronic self-control is possible.

rely on external resources —imagine a man who calls his therapist to deal with his current suicidal inclinations (cf. Mele, 1990, p. 461). And while Ulysses' case is a classic example of a strategy that is both diachronic and externally-scaffolded, diachronic strategies may rely on intrapsychic processes alone—imagine someone who wishes not to display a fearful response in the presence of a dog in some particularly important situation, and who in anticipation of that occasion undertakes exercises with the aim of seeing the dog under a non-frightening light[4].

The second important point to bear in mind is that there are several particular strategies that fall under the scope of each of these four strategy categories. There are, for instance, other kinds of synchronic intrapsychic strategies besides impulse inhibition. Prominent examples are reappraisal and distraction strategies. While craving for some tasty-looking chocolate cookies, I might make a deliberate attempt to think of them as sitting lumps of fat (cf. Kennett & Smith, 1996, p. 69). Or I might make a deliberate attempt to distract myself from their attractive looks, for instance, by purposively engaging in some cognitively demanding activity.

Diachronic and externally-scaffolded strategies also come in different flavors. Typical examples involve situation selection —as in the case of someone who decides not to go the bar in order to avoid the temptation of having a drink—, and situation modification —as in the case of someone who places the alarm clock across the room to ensure that she will get out of bed when the alarm goes off. But, for instance, reappraisal strategies arguably admit of diachronic versions, and distraction strategies also admit of externally-scaffolded versions in cases where they rely on available external resources.

3. Restrictive versus inclusive views of self-control

Imagine a soldier who feels utterly terrified at the prospect of being hurt in battle, but who nonetheless manages to stay at her post and fulfill her assigned duties. We would likely assume that she exercised self-control not to act on her inclination to flee from the battlefield. But what if we learn that she purposively decided to wear a pair of high-tech glasses that screen from her view all potentially fear-inducing stimuli, or that she decided some time in advance to take a pill that has the effect of vanishing all feelings of fear and thoughts of fleeing from her mind[5]? These would not be cases of *conquering* her fear and its associated inclination to flee, but of *circumventing* it (Mele, 1990). The question is then whether the cases thus described involve self-control or are best thought of as belonging to a different sort of self-regulation category.

[4] Hofmann and Kotabe discuss several diachronic strategies for 'boosting willpower' in anticipation of motivational conflicts that agents expect to encounter in the future, which they see as a form of 'preventive self-control' (Hofmann & Kotabe, 2012, p. 717). There is some room for argument concerning cases of this sort, and some people may prefer to read these cases as synchronic at bottom and claim that there are no clear examples of strategies that are both diachronic and intrapsychic. I believe that there are *bona fide* cases of diachronic intrapsychic strategies, but I will not press that particular point here as it does not relate directly to my main argument in the ensuing discussion.

[5] These scenarios are loosely based on (Levy, 2017) and (Sripada, 2020) respectively.

Restrictive views of self-control identify exercises of self-control narrowly with intrapsychic strategies that are synchronically employed (Baumeister, 2014; Holton, 2009; Levy, 2017; Sripada, 2020). *Inclusive* views, on the other hand, admit of various kinds of diachronic and externally-scaffolded strategies as falling within the purview of self-control (Duckworth et al., 2016; Gillebaart & de Ridder, 2015; Heath & Anderson, 2010; Hofmann & Kotabe, 2012; Koi, 2021; Mele, 1987, 2003; Vierkant, 2014).

Inclusive views typically argue for the broader conception of self-control by way of functionalist considerations. Under the appropriate functional descriptions, framed in terms that are sufficiently coarse-grained, it is easy to see how synchronic intrapsychic strategies and diachronic and externally-scaffolded strategies may be fulfilling what turns out to be the same functional role. If self-control is seen in functional terms, then it seems widely plausible that it may be multiply realized.

Restrictive theorists, on the other hand, resort to two main types of arguments. First, they argue that inclusive views are susceptible to intuitive counterexamples (Levy, 2017; Sripada, 2020). The above cases of blocking the perception of frightening stimuli via some high-tech device, or of taking a pill to get rid of a troublesome feeling, are thought to be clear counterexamples to inclusive views. According to restrictive theorists, the compelling reading of these cases portrays an agent finding clever ways to *avoid* encountering a self-control dilemma, rather than ways of successfully dealing with one. If the intuition is granted that these cases do not seem to involve actual exercises of self-control, then the challenge for inclusive theorists is to find a way of making a principled distinction between these examples and other sorts of non-synchronic or non-intrapsychic strategies that putatively involve exercises of self-control.

To take things one step further along a restrictive line, consider the following error theory for the intuition that some diachronic externally-scaffolded strategies amount to proper instances of self-control (Sripada, 2020, n. 26; Irving et al., 2022). It might be that the correct explanation for the intuition that cases of this sort involve an exercise of self-control is that most instances of diachronic externally-scaffolded strategies are actually *impure* cases, with both diachronic and synchronic, externally-scaffolded and intrapsychic elements playing a role in the explanation of behavioral outcomes. The restrictive suggestion is, then, that when we think about some instances of diachronic and externally-scaffolded strategies, it is the covert involvement of some synchronic intrapsychic elements that grounds the intuition that we are looking at proper cases of self-control. I will come back to this line of thought in section 6.1 below.

The second main kind of argument for a restrictive view appeals to the notion of a scientific kind as a criterion for how best to carve up phenomena (Sripada, 2020, p. 17). The thrust of the argument is that to restrict the scope of self-control to synchronic intrapsychic processes might allow to identify a well-behaved phenomenon that lends itself to scientific explanation and generalization, whereas the inclusion of diachronic and externally-scaffolded strategies would leave us with a fuzzy concept that —it is argued—is harder to capture in terms of law-like generalizations or mechanistic explanations[6].

[6] The dialectic between restrictive and inclusive views of self-control resembles in many respects positions in the debate between supporters of extended cognition and its critics. For instance, some of Robert Rupert's

In turn, an available reply for inclusive theorists is to point to the well-documented fact that people resort to an ample spectrum of different strategies to promote goal-congruent behaviors in the face of actual or anticipated self-control dilemmas, including both synchronic and diachronic, intrapsychic, and externally-scaffolded strategies (Milyavskaya et al., 2021). An inclusive theorist might then argue that the relevant *explanandum* for scientific research is given by what people actually do when facing self-control dilemmas, instead of advocating on principled theoretical grounds for a distinction that does not come out clearly from looking at actual practice. This point of the dialectic between restrictive and inclusive views highlights a fundamental difference between both sorts of approaches, as they are aiming at different explanatory goals. While restrictive theorists have an eye on producing a characterization of self-control that paves the way for law-like generalizations, and possibly also allows for a reductive explanation in terms of the underlying subpersonal machinery, inclusive views might be seen as primarily attempting to capture some relevant facts about how, in real life conditions, people's attempts at self-control seem aptly described as imbricating both synchronic, intrapsychic, diachronic, and externally-scaffolded elements[7].

In the following sections, I will argue that a proper understanding of the self-control dilemmas faced by addicted agents and of the strategies that are crucial for addicts attempting to achieve abstinence provides new reasons for favoring an inclusive view of self-control. But it is always open for a restrictive theorist to reply that all this is fine, expect that it amounts to a form of *self-regulation* rather than to a form of *self-control*. So, is this just a terminological dispute? I suggest it is not.

Beyond one's choice of words, inclusive and restrictive views rely on what are at bottom fundamentally different pictures of how human psychology works. Inclusive views take its cue from the broader tradition of externalist approaches to understanding psychological states and processes, a research program with a long historical pedigree and which plays a prominent role in many recent developments in psychology and the cognitive sciences, whereas restrictive theories build on a no less distinguished tradition of internalistic approaches. Inclusive theories neither need to deny the importance of the law-like generalizations that restrictive theorists aim to uncover, nor do they necessarily need to dispute the fruitfulness of attempting to deliver a mechanistic explanation of synchronic intrapsychic processes of self-control. The suggestion by inclusive theorists is rather that to identify self-control processes with processes taking place inside the skull is overly narrow, and fails to take into account a crucial feature of human agents, namely that the normal course of human psychological functioning involves deploying our cleverness to systematically exploit the opportunities afforded by situations and environments in order to further expand and more fully exploit our psychological capacities.

There are two upshots to this way of picturing the dialectic between restrictive and inclusive theories of self-control. One is that it turns out to resemble in many ways other well-known disputes between internalistic and externalistic approaches to cognition and psychological phenomena more generally. The fact that this sort of dispute is so widespread concerning all sorts

(2004) arguments against the hypothesis of extended cognition raise similar points to the restrictive argument concerning scientific kinds.

[7] I thank an anonymous reviewer for suggesting this way of framing the debate.

of different phenomena suggests that the debate reflects a genuine theoretical difference, rather than merely a terminological dispute. The second upshot, however, is that we probably will not find widely accepted knock-down arguments that favor decisively one of the sides of the dispute in the end. What we might attempt is to build persuasive arguments and attempt to articulate the basic intuitions behind each sort of approach as best we can, and hopefully learn a few things about self-control in the process.

To that task I turn in the following sections.

4. Addiction as a test case for theories of self-control

Why is a look into addiction cases important for thinking about self-control? There are two main reasons for thinking so. The first relies on the observation that the efforts by addicted agents attempting to remain abstinent seem intuitively clear, even paradigmatic examples of an agent attempting to exercise self-control. These involve particularly stark self-control dilemmas, which are part of what distinguishes self-control from other forms of self-regulation. Given that attempting to exercise self-control is precisely what these agents appear to be doing, it would take powerful reasons to defeat such a compelling presumption. The second reason concerns the sheer frequency with which self-control might be called for in severely addicted agents. People in that situation not only face the relevant sort of self-control dilemma, but they might experience the need to exercise self-control recurrently throughout the day. That also makes addiction a particularly interesting test case for theories of self-control.

Consider, first, the claim that addicts attempting to remain abstinent face an intuitively paradigmatic sort of self-control dilemma[8]. I submit that, in the absence of powerful reasons to the contrary, the default view must be that the predicament of an addict attempting to refrain from drug use involves precisely the sort of motivational conflict that exercises of self-control are meant to address.

A person in that situation is obviously facing a major challenge of self-regulation, that much is beyond doubt. But the relevant sort of challenge is plausibly seen as a self-control dilemma, insofar as it involves an intuitively clear case of an agent experiencing the relevant kind of motivational conflict. Addicted persons experience desires, cravings, or urges to use drugs that constitute a powerful source of motivation. In some cases, there might be a certain degree of automaticity involved in performing the relevant behaviors (Tiffany, 1990), but in most cases addictive behavior is intentional and consequently its explanation must be framed in terms of motivation. And there are reasons to think that addictive desires are unordinary, in part, in virtue of carrying a particularly strong motivational force (Butlin & Papineau, 2017; Holton & Berridge,

[8] Unfortunately, there is, to the best of my knowledge, no direct experimental evidence regarding what the folk view is about this particular matter. There is evidence that suggests that people ordinarily think of addiction as compromising agents' ability to control their behavior, or their free will, to some extent (Racine et al., 2017; Rise & Halkjelsvik, 2019; Vonasch et al., 2017, 2018). However, the folk opinion about control and free will in addiction is amenable to both a restrictive and an inclusive view of self-control, so it does not carry much weight for the point here under discussion.

2013). At the same time, addicts attempting to remain abstinent typically hold the judgement that continuing to use is not the best course of action for them. If an agent instantiates the motivational profile just described and, at the same time, holds an incongruent evaluative judgement, then that agent faces a particularly difficult sort of self-control challenge[9].

That much seems apparent from looking at the everyday usage of referring to all sorts of behavioral tendencies as 'addictions', which highlights the intuitive understanding of addiction as a prototypical situation where self-control is called for. When someone claims, for instance, to be addicted to chips, the statement is not typically meant as literally true. What is usually conveyed by that choice of words is that the person experiences particularly strong desires to eat chips, that she thinks that eating chips in proportion with her desires is unadvisable, and that difficult exercises of self-control are involved in attempting not to overindulge in chips-eating.

The second reason for seeing addiction as an important test case for theorizing about self-control concerns the *tremendous frequency* with which addicted people attempting to refrain face self-control dilemmas. The remarkable strength of addictive motivation to use drugs resides not only in the phenomenological salience of the urges to use drugs experimented by addicted agents at particular times, but in the fact that these drug-related desires may be recurring at a tremendous rate over relatively short time-windows (Sripada, 2018). Further, this unusually high degree of recurrence is particularly resistant to being undermined by desire-incongruent judgements held by the same agent (Burdman, ms.; Wallace, 1999). This has led some to argue that addiction involves an element of obsession, akin to the desires experienced by people suffering from obsessive-compulsive disorder (Anton, 2000). As a result, an addict who is committed to abstinence is not only a particularly clear example of someone who needs to exercise self-control, but is someone who will encounter the need to exercise the relevant abilities unusually often, in many cases over extended periods of time.

In fact, addiction is often portrayed as a chronic condition (e.g., McLellan et al., 2000), and the need to recurrently exercise self-control might be a continuing affair over the years. And addiction recovery is also notoriously susceptible to relapse (Kirshenbaum et al., 2009). To quit is exceedingly difficult at first, and many people try to do it and fail, but even those who succeed have a substantial risk of relapsing at some later time. Many addicted agents go through the cycle of attempting to quit and relapsing several times through the years. The critical point for present purposes is that self-control seems precisely what the addicted person struggling to remain abstinent is aiming for, whether successfully or not. And addicts who manage to do it successfully are plausibly pictured as paradigmatic examples of agents who succeed at self-control, arguably as a reflection of the fact that quitting is so difficult.

A crucial point to note here is that the claim that suffering from an addiction may lead people trying to quit to be in the situation of recurrently needing to exercise self-control, is not the same as picturing the predicament of addicted agents as involving any malfunction of self-control

[9] Of course, not all addicts experience motivational conflicts. There are addicts who do not in fact hold desire-incongruent evaluative judgements, and who are not attempting to quit. Some may even approximate Frankfurt's (1971) picture of a 'willing addict'. Still, there are many addicted people who engage in prolonged, difficult, costly, and often painful attempts to quit using drugs and who struggle hard to do so, and who seem to be aptly described as facing self-control dilemmas.

per se. Indeed, there are no clear reasons to suppose that addicted agents lack a capacity for self-control at any particular time-slice. Both drug-related desires (Burdman, ms.; Butlin & Papineau, 2017; Holton & Berridge, 2013; Wallace, 1999) and drug-related thoughts (Levy, 2014; Pickard, 2016; Sripada, 2022) appear to work in addiction in anomalous ways. As a result, addicted agents may be said to display a decreased responsiveness to reasons when it comes to matters related with drug use (Burdman, 2022). That is not say, however, that they lack a capacity for self-control at any particular point in time.

Here, again, recurrence plays a crucial role in the explanation of behavioral outcomes. Consider, for instance, an analogy with a simple cognitive operation like the one involved in performing the Stroop task (Sripada, 2018). Most people enjoy a perfectly working capacity to recognize the mismatches between word meaning and word color that subjects are asked to identify in a standard version of the Stroop task. Still, if asked to go through a substantial number of trials of this seemingly simple task, virtually all people will at some point fail to deliver the right results. It seems plausible that something like this might be happening in self-control failures in addiction. Addictive desires and addictive thoughts have some unordinary features. As a result, addicted agents attempting to refrain face the predicament of dealing with self-control dilemmas at a tremendous frequency. There need not be anything amiss with their capacity to exercise self-control at any individual point in time, and yet the overall result might be a considerable risk of self-control failure on account of the sheer frequency with which the relevant abilities are called into play[10].

5. Self-control strategies in addiction

There is ample evidence that both diachronic and externally-scaffolded strategies are of primary importance for addicted agents attempting to quit or in the early stages of recovery. When we think about addiction as a condition where self-control dilemmas are especially poignant, an awareness of the role played by these strategies makes an inclusive view of self-control increasingly plausible. Let us take a closer look at what some of the major relevant strategies are, and at why they are so important for addicted agents.

5.1. Why are diachronic and externally-scaffolded strategies crucial in the context of addiction

There are several important reasons why relying on synchronic intrapsychic strategies alone would leave addicted individuals attempting to quit even more vulnerable to self-control failure. These relate in diverse ways to the recurrence-based picture of addictive desires that I discussed above.

The high degree of recurrence of these desires in addiction is partly a consequence of the fact that addicted individuals develop a hypersensitivity to drug-related cues that trigger craving episodes (Robinson & Berridge, 2008). Craving-inducing cues may be perceptually available items that bear a learnt association with drug use (Cooney et al., 1987; Litt et al., 2000), even if these are

[10] I discuss more fully the role of recurrence in explaining addictive behavior in (Burdman, ms.).

subliminally presented (Ingjaldsson et al., 2003). But they may also include other contextual factors that bear a learnt association with drug use, such as time of the day (Palij et al., 1996), or concurrent behaviors —for instance, nicotine addicts typically experience greater desires to smoke when drinking coffee or alcohol (Burton & Tiffany, 1997). Further, craving episodes may also be triggered by physiological deficit, especially in abstaining individuals (Jorenby et al., 1996), and by psychological factors such as negative mood or stress (Sinha et al., 1999).

The fact that drug craving is so highly susceptible to being triggered by all these various kinds of cues makes situation-selection strategies crucially important to attempt to diminish the frequency of craving episodes —a point I will return to in a moment. But, first, let us consider some of the consequences that follow from the recurrent need to engage in self-control once cravings are experienced, as these point to several ways in which synchronic intrapsychic strategies turn out to be highly unreliable.

A first source of unreliability for these strategies follows directly from considerations of fallibility of the sort discussed above. As pure 'willpower' is recruited at such tremendous frequency, it becomes increasingly more likely that it will eventually fail to deliver expected results on some occasions due to 'pure errors' (Sripada, 2018).

Moreover, the capacity to successfully refrain by synchronic intrapsychic strategies is negatively affected by contemporaneously experienced negative emotions (Luerssen & Ayduk, 2014). Again, this leaves addicted agents particularly vulnerable to self-control failure when paired with the fact that they will typically experience motivational conflict so often throughout the day, thus naturally increasing the likelihood that at some point self-control efforts will be required while being in a low mood.

Relatedly, even when synchronic intrapsychic strategies are effective, they may be notoriously difficult to sustain overtime. Consider, for instance, distraction strategies. It is a classical finding of delay of gratification experiments that many of the subjects who successfully manage to delay gratification engage in various forms of attentional manipulation, to distract themselves from the availability of the tempting targets (Mischel et al., 1989). And studies of addiction also indicate that engaging in cognitively demanding tasks has the effect of reducing current levels of craving (Hamilton et al., 2013; May et al., 2010). The problem with such strategies is that they are inherently difficult to sustain over time, and, therefore, not well-suited to deal with a highly recurrent need to engage in self-control efforts. Moreover, they are also often very costly for the agent. Purposeful attentional manipulation involves the recruitment of cognitive capacities that have a limited span, and that become unavailable for other non-self-control-related purposes. If this situation persists during long stretches of time, the cost for the agent becomes enormous in terms of missed opportunities to pursue other activities (Kurzban et al., 2013).

In a similar vein, synchronic intrapsychic strategies are effortful. Exertions of mental effort typically involve an aversive phenomenology (Sherman et al., 1986). Again, when paired with the fact that motivational conflict is experienced at such tremendous frequency rates, this points to a further way in which relying on this sort of strategy alone will be highly susceptible to failure, as it will end up undermining the motivation of the agent who finds herself recurrently undergoing aversive experiences.

5.2. A quick tour of diachronic and externally-scaffolded strategies in addiction

Snoek, Levy, & Kennett (2016) conducted a series of qualitative interviews with addicted persons over three years, with the purpose of tracking their trajectories and identifying features of their life narratives that correlated with positive or negative clinical outcomes. Interestingly, most addicted participants seeking for treatment described themselves as strong-willed, and even as very strong-willed, in a way that clashes with the commonsense notion that addicts' difficulty in overcoming problematic drug use stems from a lack of resolve or 'willpower' to remain abstinent. How strong-willed the respondents took themselves to be, however, failed to correlate with positive clinical outcomes. Instead, what was predictive of positive clinical outcomes was participants' use of diachronic and externally-scaffolded strategies.

Among these, one of the most effective strategies according to that study was to move to a different place where drug-using opportunities would be scarcer. Indeed, drug treatment programs often advise people under ambulatory treatment to move to new locations (Doyle et al., 2013)[11]. And removing the person from environments associated with drug use is one important consideration behind the admission of patients at treatment facilities in more severe cases. As the evidence suggests, remaining abstinent is much more likely for those who experience a significant change of setting and circumstances. As well as a change in location, changes in social setting and relations are also important. Addicts seeking to refrain who break ties with former drug-using companions are four times more likely to remain abstinent than those who do not (Schroeder et al., 2001)[12].

An intriguing and much discussed case in the addiction literature concerns the American veterans of the war in Vietnam. As it happens, vast numbers of American military personnel abused drugs systematically while on the front, in many cases during extended periods of time. Upon returning home, however, only a small fraction of them kept on using drugs problematically (Robins et al., 1974). The data might be accounted for in several ways, but one plausible explanation points to the importance of changes in physical and social setting in the process of overcoming substance-abuse problems[13].

These situation-selection strategies aim primarily at reducing the frequency and the strength of craving episodes. But they are more likely to be effective when paired with other sorts of strategies that target different points in the chain leading from craving to behavior enactment. For instance, drug treatment programs often also use different sorts of pre-commitment and

[11] This leads to some troubling consequences when paired with the socio-economic dimension of addiction, as some people simply cannot afford the change of setting that might increase their chances of overcoming problematic drug use.

[12] There is often also a downside here, as this may leave the person without her only realistically available social network, and support from close relations is also particularly important in the context of recovery.

[13] Other popular explanations point to the idea that addictive drug use might be a form of self-medication to deal with difficult life conditions (cf. Khantzian, 2003), or question whether the veterans were correctly pictured as addicts in the first place (Sinnott-Armstrong, 2013, p. 134).

incentive strategies, where the individual agrees to the imposition of rewards or penalties contingent on urine-sampling proof of abstinence or failures of abstinence (Giné et al., 2010; Petry et al., 2017). These rewards (or penalties) sometimes involve monetary incentives, which need not consist in large amounts in order to be effective. Alternatively, a more radical way of self-imposing penalties by external means to discourage future consumption is through the use of medication that is known to cause severe sickness in case the person gives in to drug use. This is a especially common strategy for people struggling to overcome alcoholism (Banys, 1988).

Another major externally-scaffolded strategy in many drug treatment programs is group support. Attending regular meetings with others struggling to overcome their addictions is for many people a valuable way of promoting abstinence. This is related to the peer-pressure the group exerts to remain abstinent and to the importance of social and emotional support in the context of these psychologically challenging processes (Flanagan, 2013). Some programs make available individual advisors that the agent may resort to in times of high vulnerability to relapse, one of whose functions is to help the addicted person go through difficult circumstances without resorting to drug use.

Other valuable strategies aim directly at reducing the opportunities for enactment of the unwanted behaviors. For instance, the Soviet leader Leonid Brezhnev reportedly used a time-locked cigarette case that dispensed only one cigarette per hour to manage the rate of his cigarette consumption[14]. Taking steps to reduce the physical availability of drugs is known to have a positive overall effect in reducing consumption (Palij et al., 1996).

Lastly, another crucial diachronic and externally-supported strategy is given by changes in attitudes that the agent may try to achieve through psychotherapy. A crucial part of the recovery process is to reshape self-identity and to develop a believable self-narrative in which a drug-free path forward is open to the individual (Pickard, 2020). That is the major objective of narrative therapy and other forms of 'talking' therapy for addiction (McConnell & Snoek, 2018).

5.3. How this supports an inclusive view

Addiction is an important test case for theories of self-control, as it involves a paradigmatic example of the sort of situation where self-control is called for. And abstaining addicts are paradigmatic cases of people who manage to exercise self-control successfully. It then becomes relevant for the self-control debate that the evidence points to the conclusion that diachronic and externally-scaffolded strategies play such a crucial role in explaining how some addicted individuals are able to meet that huge self-control challenge and achieve abstinence. As we ponder the fact that people who face this paradigmatic sort of self-control challenge and succeed, manage to do so by engaging in various diachronic and externally-scaffolded strategies, this makes an inclusive view of self-control look increasingly plausible.

[14] See Brezhnev's biographical sketch at United Press International, https://www.upi.com/Archives/1982/11/11/Leonid-Ilyich-Brezhnev-Soviet-president/2174405838800/ (retrieved April 28th 2022).

As I argued, the sort of recurrent motivational conflict experienced by addicted individuals attempting to remain abstinent is plausibly understood as a recurrent self-control dilemma. And it seems intuitively right to say that what these agents are doing is in fact *to deal* with real, pressing, stark motivational conflicts, in stead of avoiding them. Plainly, the need to exercise self-control is anything but avoidable for recovering addicts. So, the fact that those who succeed mostly do so by engaging in various kinds of diachronic and externally-scaffolded strategies provides a *prima facie* reason for seeing these as proper self-control strategies, rather than as ways of avoiding the need to exercise self-control.

Surely, the evidence just discussed does not falsify the restrictive view. It is possible for a restrictive theorist to argue that diachronic and externally-scaffolded strategies provide valuable ways to ameliorate the need to exercise self-control, but that nevertheless this only takes place when the agent actually engages in synchronic intrapsychic efforts[15]. In the absence of direct decisive evidence, the dialectic between inclusive and restrictive accounts comes down to which one can provide the most compelling description of the relevant cases. And a focus on addicts attempting to remain abstinent gives us a clear case which lends itself to an inclusive description and where a restrictive description seems particularly unfitting. Addicts who seek to remain sober are typically only able to do so by engaging in various kinds of environmental-situational manipulations. And, as I argued, those who succeed in such attempt constitute a paradigmatic example of people who successfully exercise self-control. The inclusive view is, I submit, much better poised to capture the intuition that the relevant environmental-situational manipulations are a proper part of their self-control efforts rather than being clever complements to them.

Instead of developing my positive argument further, it will help round up my case to consider some of the replies available for a restrictive theorist. I look into two of these in the next section.

6. Two objections

6.1. Pure versus impure cases

First, a restrictive theorist might concede that diachronic and externally-scaffolded strategies in addiction in fact *look like* self-control strategies. But then she may claim that the intuitive pull behind these cases is explained by the fact that diachronic and externally-scaffolded strategies are often 'impure', meaning that they typically involve some degree of reliance on synchronic intrapsychic elements (Sripada, 2020; Irving et al., 2022). A restrictive theorist would likely press the point that diachronic and externally-scaffolded strategies simply provide means of diminishing the amount of work required from synchronic intrapsychic processes, thus explaining why they increase the likelihood of successful outcomes as intrapsychic processes become less likely to be

[15] Alternatively, another available option for restrictive theorists is to concede that an inclusive approach enjoys a local advantage when it comes to explaining cases of self-control in addiction, but still argue that restrictive theories nevertheless continue to hold a global advantage when other, more decisive, reasons are taken into account. I thank an anonymous referee for pointing out this possibility.

overwhelmed. However —the objection goes—, the intuition that they are playing an integral part in self-control efforts is better explained by the fact that synchronic intrapsychic factors are always involved in these strategies as well.

There is something right to this line of thinking. In fact, diachronic and externally-scaffolded strategies are hardly ever 'pure'. Someone with a history of alcohol abuse may know herself enough to know that she will end up having a drink if she goes to a bar at night and decide to stay at home instead. There is a diachronic element of situation selection involved here, but there is still also an element of synchronically refraining from going to the bar at each point that the inclination to do so surfaces through the night as well. It is easier to refrain from going to the bar than to refrain from having a drink when already at the bar, but the strategy is still not totally devoid of a synchronic element. Similar points apply to other strategies. Brezhnev's time-locked cigarette case represents an obstacle for behavior enactment, but this will only be useful when paired with a committed policy not to procure cigarettes from other sources.

Apart from rare cases, diachronic and externally-scaffolded strategies always require some degree of involvement from synchronic and intrapsychic processes. But then, the claim at issue is not that the relevant strategies are *purely* diachronic or *purely* externally-scaffolded. It is that strategies that include these diachronic and externally-scaffolded elements are not merely clever devices to reduce the need for self-control but are an integral part of proper exercises of self-control[16]. Consider, for instance, the analogy with the case for extended cognition. Of course, brain processes will always be a fundamental part of the picture on any account. The point at issue is rather whether we gain understanding into cognitive processes by acknowledging that they may involve manipulation of external structures as proper parts of that processing.

Indeed, once the point is acknowledged that 'pure' self-control strategies are somewhat unusual, we start to lose grip on the rationale for restricting the scope of self-control to synchronic intrapsychic processes. It is probably true that 'pure' cases relying solely on intrapsychic processes are more readily conceived, but that is consistent with the view that what people typically do is to rely on strategies that seamlessly blend intrapsychic and diachronic and/or external elements. Indeed, that fact turns out to be a major reason for favoring an inclusive view, insofar as it seems better poised to capture the actual practice of self-control.

[16] Irving et al. (2022) tested the 'contaminated intuitions' hypothesis concerning the folk view of self-control, by attempting to disentangle the influence of synchronic and diachronic elements on appraisals of self-control via factorial analysis. Their results, they claim, support the conclusion that 'the folk deny that [diachronic regulation] is an exercise of self-control' (p. 13). I think this is probably an overstatement. As noted in the main text, the claim that inclusive views put forward is not about purely diachronic or purely externally-scaffolded strategies, which are conceivable —as in the story of Ulysses and the Sirens— but arguably rare occurrences. Using a slightly different approach, the Bermúdez et al. (2021) study found that people often saw (impure) diachronic and externally-scaffolded strategies as *bona fide* instances of self-control, though maybe as less prototypical than cases of effortful inhibition. That result is consistent with an inclusive view of self-control.

6.2. Counterexamples

Another objection to my account concerns the sort of seemingly compelling counterexamples to inclusive views mentioned before. Taking a magical pill that makes all feelings of fear fade away hardly looks like an exercise of self-control. So at least some instances of resorting to extra-psychological elements to deal with motivational conflicts do not seem to amount to exercises of self-control —let us grant that much for the sake of argument. A restrictive theorist might then press for the need to set some sort of demarcation criterion that allows to tell apart such cases from alleged *bona fide* instances of self-control that rely on diachronic and externally-scaffolded elements.

In reply, consider that, once it is recognized that most real-life instances of self-control involve a seamless blending of synchronic intrapsychic and diachronic and externally-supported elements, it becomes much less clear that the alleged counterexamples to the inclusive picture are decisive. Imagine, for instance, that there existed a magical pill that made all alcohol-oriented desires instantly go away, but that the effect of the pill was short lived, so you would need to take it right then and there when the temptation to have a drink arises. On that scenario, the agent would need to bring herself to take the pill instead of having the drink. Is there not, then, some intuitive grounds for picturing that as an exercise of self-control? It seems plausible to argue that there is.

A second available reply for an inclusive view is to bite the bullet and provide a criterion to tell these cases apart. I take it that the intuition that the magical pill case does not amount to an exercise of self-control is grounded in the fact that *it just looks too easy*. And restrictive theorists have an available contrasting account, as they highlight the way in which exercises of self-control involve mental effort. Inclusive theories, I suggest, might resort to an alternative hypothesis concerning 'the mark of self-control', namely that exercises of self-control involve *costly or difficult performances*.

I cannot develop the full case for this claim here but briefly consider the prospect of such an account. Of course, exertions of mental effort are inherently difficult, and they are also costly for the agent, at the very least insofar as they involve opportunity costs —they recruit cognitive processes that operate serially and thus become unavailable to other ends. So synchronic intrapsychic strategies such as impulse inhibition or reframing count as instances of self-control under that criterion. But costliness and difficulty may also be instantiated in many other ways besides effortfulness. Actions undertaken as part of diachronic and externally-scaffolded strategies typically involve foresight, planning, and resolve, they may in some cases lead to experiences of emotional distress, or they may involve the psychologically challenging step of breaking up old habits. Moreover, they may also be difficult to sustain over time even if they do not involve exertions of mental effort in a prominent way.

Think, for instance, of an addict who undertakes therapy in an effort to build a new sense of purpose and identity that is free from the drug-centered lifestyle she wishes to leave behind, carefully developing new networks of social relations and support, and attempting to develop credible narrative threads in which a drug-free path might look like an available option going forward. As discussed before, many people in that situation decide to move to a different place and to distance themselves from many important social relations in an attempt to achieve

abstinence. These are all remarkably costly courses of action. They may be in some cases be costly in a financial sense, but first and foremost they involve huge emotional costs for the agent and the psychologically challenging process of adapting to new circumstances and breaking up old habits, both of thought and behavior. Dealing with these costs is of course an immensely difficult and challenging task, very much unlike the simple step of swallowing down a pill.

7. Conclusion

Addicts attempting to remain abstinent represent an important test case for theories of self-control. Agents in such a situation face a particularly stark form of self-control challenge, and they may face such a challenge at remarkable frequency rates. Moreover, those who manage to do it successfully constitute a paradigmatic example of people who are successful at exercising of self-control. The evidence from the addiction literature highlights both the unreliability of synchronic intrapsychic strategies and the crucial role that is played by diachronic and externally-scaffolded strategies in successfully dealing with such self-control challenges. This, I have argued, makes a description of the case in line with an inclusive theory of self-control much more plausible. Though probably not decisive, this may be enough to give the inclusive view the upper hand and to shift the burden of proof back to the restrictive theorist's dialectical field.

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