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Thomas Schelling and the Theory of Self-Command

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1. Introduction

What is self-command? What is the theory of self-command?

In this chapter we explore what Thomas Schelling had to say about the problem of self-command. We summarize his theory of self-command and contextualize and critically assess it.

2. Schelling's theory of self-command

Why is it so hard for so many of us to sit down and write the book chapter we already decided to write? Or, why do so many of us have trouble taking up exercise (or any other activity that is likely to benefit us in the long run)? And, why do so many have trouble giving up smoking (or any other activity that is likely to cost them dearly in the long run)?

Schelling tried to answer these, and numerous similar problems of self-command, or self-control, or self-discipline, in a series of articles. The most notable and easily accessible is Schelling (1984) which draws heavily on Schelling (1980, 1982), both reprinted back-to-back in Schelling (1984a).

Importantly, Schelling also reflected on the tactics and techniques of "self-management" (TS 1980, p. 63) or "strategic egonomics" (TS 1982, p. 63) that we use to outsmart ourselves (write that chapter, work out, quit smoking, etc.)

Outsmart ourselves? Self-management? Strategic egonomics? Says Schelling, "People behave sometimes as if they have two selves, one who wants clean lungs and long life and another who adores tobacco, or one who wants a lean body and another who wants dessert, or one who yearns to improve himself by reading Adam Smith on self-command (in *Theory of Moral Sentiments*) and another who would rather watch an old movie on television. The

two are in continual contest for control" (TS 1980, 58).

By conceptualizing the problem of self-command as that of a continual contest for control between two selves, Schelling -- as had few others before him -- moved away from the "individualistic-utilitarian foundation of neo-classical economics" (TS 1980, 59) that viewed humans[1] as entities: "If we accept the idea of two selves of which usually one is in charge at a time, or two value systems that are alternate rather than subject to simultaneous and integrated scrutiny, 'rational decision' has to be replaced with something like collective choice. Two or more selves that alternatively occupy the same individual that have different goals and tastes, … have to be construed as engaged not in joint optimization but in a strategic game" (TS 1982, 93/4). In this strategic game, the problem of self-command arises when the preferences and values of the two selves are incompatible and when behavior -- such as working out, or not lighting a cigarette, or not accepting that first drink -- is "voluntary and conscious" (TS 1980, p. 64) but cannot be implemented.

It is the conceptualization of ourselves as two, in the lingo of modern economics, time-inconsistent selves that is at the heart of Schelling's theory of self-command. This conceptualization also prompts questions that are notoriously difficult to answer: How do we value (our) preferences "today" and how do we value those "tomorrow"? By way of Schelling's most poignant example (1984, 2) [2]: How do we value someone's wish today to be prevented from committing suicide when that someone, under different (but predictable) circumstances, clearly prefers to be dead tomorrow? Or, how do we value someone's wish today to die when that someone clearly cannot "face the finality of bringing it [death] about, and, like the parachutist who asks to be shoved out if he grips the door jam, implores our help in getting him over the brink" (TS 1984, 2)?

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[1]And even firms and organizations and families, as Schelling pointed out (1980, 60).
[2] "There is no graver issue for the coming century than how to recognize and authenticate the preferences of people for whom dying has become the issue that dominates their lives. This is the ultimate dilemma of authenticating the self, of discovering the legitimate sovereignty of the individual." (TS 1982, 112)

Or, to use a less dramatic but recurrent example in Schelling's reflections on self-command (e.g., TS 1980, 73 – 6, or TS 1992), how does one weigh the pleasure someone gets from smoking on the one hand and the health benefits that s/he might get from kicking that addiction on the other? In each and every one of his articles, Schelling wrestles with answers to these and similar welfare questions, occasionally (e.g., the example of Captain Ahab[3]) expressing doubts about his earlier assessments of the benefits and costs of certain actions. Will the "true" (TS 1984, 2), or "authentic" (TS 1980, 5) self, please step forward? Does it even exist?[4] Does the authentic self exist *per se*?[5]

Nevermind the novel and rather difficult identity and welfare considerations brought about by the problem of conflicting preferences and values, the problem of self-command prompts in addition interesting legal, ethical, and policy questions: "Legal issues arise in some attempts to abdicate rights that are deemed to be inalienable. I cannot get a court injunction against my own smoking. I cannot contract with a skydiving pilot to push me out of the airplane. ... I cannot contract with a fat farm to hold me against my will until I have lost some number of pounds; they have to let me out when I ask" (TS 1984, 2). Should there be such court injunctions? Should there be such contract possibilities? Is it right that "the law takes sides with the self that will not die" (TS 1984, 3)? Should the law take sides when the authentic self is not in question?[6]

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[3] "A few years ago I saw again the original Moby Dick … . There was a scene … of Ahab in the water losing his leg, and immediately afterward below deck under a blanket, eating an apple with three of the crew. The blacksmith enters with a hot iron to cauterize the stump. … When I was first contemplating this episode I thought it an incontestable case of the utility gain from denying freedom of choice and ignoring revealed preference. … how do we know whether an hour of extreme pain is more than life is worth? Alternatively, how do we know whether an hour of extreme pain is more than death is worth? The conclusion that I reach is that I do not know, not for you and not for me" (TS 1984, 9).

[4] "The question, which is the authentic one, may define the problem wrong. Both selves can be authentic" (TS 1984, 9; see also, almost verbatim, TS 1982, 108).

[5] Unlikely. See LeDoux (2002).

[6] "Anyone who is happily addicted to nicotine, benzedrine, valium, chocolate, heroin, or horse racing, and anyone unhappily addicted who would not elect the pains and deprivations of withdrawal, are not my subject. I'm not concerned with whether cigarettes or rich desserts are bad for you, only with the fact that there are people who wish so badly to avoid them

As Zeckhauser (1988) observed, “A policy question always lurks in the background: If I can not choose for myself, then on what basis can others decide that I should not be afforded this freedom?” (161) Obviously, this policy question becomes the more relevant and pressing the more likely, as in the case of smoking, second parties are affected by the (authentic) self’s struggle with the other self.

While Schelling wrestled with the welfare questions, and ethical, legal, and policy questions resulting from the conceptualization of ourselves as two time-inconsistent selves, the major thrust of his discussions was, unfailingly, to come up with clever ways to make do without legal instruments and ethical and policy discussions.

In other words, he was interested in devising time-consistent mechanisms, or commitment devices, that would, duly implemented, allow today’s self to effectively constrain the choice set of a later self in such a way that today’s self would carry the day: “If we are clever we can arrange it; I go to a remote fat farm that requires a 24-hour notice to order a car, a notice that I can rescind during a moment’s resurgent resolve to lose weight” (TS 1984, 2). Unfortunately, such solutions do not always come easy: How does one arrange to stay away from cigarettes when they can be bought at every corner? Should one be dropped off in the wilderness, without cigarettes, so that it takes days to arrive at civilization?

To find solutions, Schelling suggested that we take cues from our dealings with others, in particular those that are close to us: “Many of the skills and maxims and stratagems for coping with one’s own behavior become less mystifying and more familiar if we can recognize them as the same principles and stratagems that apply to managing someone else – someone in a close relation, with a paternalist or senior-junior quality like that between parent and child, teacher and pupil, missionary and convert, master and apprentice, or guide and follower” (TS 1980, p. 63).

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that, if they could, they would put these commodities beyond their own reach” (TS 1984, 4/5).

His articles (e.g., Schelling 1984, 6/7) contain numerous examples of strategies of commitment that enable one of the alternating selves to carry the day, some of them true and tried methods familiar to the reader of this chapter: "Relinquish authority to somebody else: let him hold your car keys. … Remove the mischievous resources: don't keep liquor, or sleeping pills, in the house; order a hotel room without television. … Incarcerate yourself: Have somebody drop you at a cheap motel without telephone or television and call for you after eight hours' work. … Arrange delays: the crisis may pass before the time is up. Use buddies and teams: exercise together, order each other's lunches. Automate the behavior. The automation that I look forward to is a device implanted to monitor cerebral hemorrhage that, if the stroke is severe enough to indicate a hideous survival, kills the patient before anyone can intervene to remove it" (6/7).

3. A critical assessment of Schelling's theory of self-command

Thomas Schelling's theory of self-command (e.g., Schelling 1984a) had less influence than his reflections on the strategies of conflict (Schelling 1980)[7] although "strategies of commitment" – a very apt title of a recent collection of his essays (Schelling 2006) – to actions that may not be time-consistent is a common theme of both books.

We have three conjectures why Schelling's work on self-command was less influential. One reason may be that these articles are rather chatty,[8] and while often delightful in their examples and suggestions for coping strategies and tactics, they do not provide the reader with the kind of theoretical scaffold on which to hang insights that relate to each other,

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[7]A scholar.google search in early July 2006 quantifies this statement: While Schelling's *The Strategy of Conflict* (1960) and *Micromotives and Macrobehavior* (1978) have been cited almost 2,000 and more than 1,000 times, respectively, *Choice and Consequence* (1984) has attracted about 150 citations. Even if we control for time, it seems indisputable that his work on self-command and related issues has made less of an impression on the profession.

[8] While often entertaining, the verbal, non-mathematical style for which Schelling is (in)famous can make for frustrating reading and frustrated readers.

notwithstanding his attempts to classify the types and circumstances in which self-command might fail us.

Schelling was quite aware of this deficiency: "It is one thing to appreciate the general idea of tactics deployed to protect oneself from oneself, and the ubiquitousness of the problem. It is something quite different to focus on a specific problem, and to do so not to illuminate a general principle but to cope with the mischief at hand. For that we need a systematic way of analyzing the habit or weakness along relevant dimensions: the vulnerabilities of its victim, the environment of its victim, the environment in which it occurs, and the information, communication, and institutional commitments that are brought to bear. I do not know of any taxonomy or analytical scheme for finding the similarities and highlighting the differences among the different habits or addictions and the targets they afflict. I can only illustrate the kinds of analytical dimensions I have in mind" (TS 1980, 69/70).

Another reason for the lesser influence of Schelling's work on self-command may be that some of the ideas were not quite as new as Schelling tried to suggest. Strotz (1956), in particular, had almost twenty years earlier addressed the issue of time inconsistency in economics (since then his article has become a symbolic reference for everyone who writes about the issue), as did Ainslee (1975). Schelling does mention both these contributions (e.g., TS 1984, 6), and he also mentions Smith's work on self-command.

In all his writings, Schelling was less than forthcoming about where the idea of the two time-consistent selves so prominent a point of departure in his ruminations on self-command came from. [9] In fact, "the Adam and the smith of systematic economics" (Boulding 1969, p. 1) suggested clearly that the problem of self-command was the problem of two conflicting

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[9] In response to a recent interviewer's question, Schelling presented it as his own idea, "I started working on that subject [of time-inconsistent selves being involved in a strategic game] in the 1970s when I was asked to join a committee of the National Academy of Sciences on substance abuse and habitual behavior. … The more I thought about this issue, the more I began to conclude that a lot of people have something like two selves … "

selves wrestling with each other (Smith 1759/1982).

Smith called these selves the Man Yesterday and the Man Today and conceptualized the Man Today as a real person existing after the Man Yesterday, as well as an imaginary construct within the mind of the Man Yesterday. As shown in Meardon & Ortmann (1996, 1996a), Smith modelled the intrapersonal struggle of Man Today and Man Yeseterday as a binary choice game that was structurally similar to reputation games widely used in modern economics in a variety of contexts (e.g., Kreps 1990). Smith, in other words, conceptualized self-command as an equilibrium sustained by internal reputation effects.

In his Richard T. Ely lecture to the American Economic Association, Schelling (1984) argued: "Adam Smith, by the way, included a chapter on self-command in this Theory of Moral Sentiments. He meant something different – courage, generosity, and other manly virtues. In my usage, self-command is what you may not need to employ if you already have enough of what Adam Smith meant by it" (1984, 3; see also TS 1980, 69). This statement does not suggest that Schelling succeeded in realizing his yearning to improve himself by reading the chapter on self-command in Smith (1759).

Smith was – without doubt – talking exactly about the same problem that Schelling was talking about. He used the same conceptualization that Schelling used, and, of course, Smith understood that not everyone was successfully disciplined through the internal reputation games being played by the two selves. The difference between Smith's and Schelling's discussion is really about the different emphasis on solution strategies. Smith, rather brilliantly, was interested in issues of the origin and evolution of self-image -- an issue that has recently attracted new attention from renowned economists (e.g., Palacios-Huerta 2003, Benabou & Tirole 2004) -- and societal sanctions to get those in line that had not enough self-command. Schelling, rather than counting on societal sanctions, was interested in strategies that allowed one self to commit itself so that another self could not carry the day; he was interested, in other words, in the mechanisms of how to deal with those situations

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(Anonymous 2005, 38).

where internal reputation games were not likely to lead to the desired outcome.

Finally, yet another reason for the lesser influence of Schelling's work on self-command may be that he – like Smith – was wrestling with a genuinely difficult problem in that to formalize it is difficult because of the "heterogeneous array of types and circumstances" (TS 1984, 4) that the basic conception of ourselves as time-inconsistent selves encompasses. In addition, there are interesting methodological problems that have slowed progress on experimental studies of discounting (e.g., Harrison & Lau 2005).

4. Conclusion

Zeckhauser (1988) suggested that "Schelling's work [contributed] fundamental game theory insights to political science, psychology, and sociology long before economists found that conjectural equilibria and commitment difficulties were central to [economics]" (160). While Zeckhauser's reflections were not quite at arms-length, his assessment strikes us as uncontroversial, even when applied to the theory of self-command.

Specifically, Schelling thought hard, and with ingenuity, about what it took for one of these selves (hopefully the authentic one) to subdue the other when the internal reputation games went awry.

While his theory of self-command has not received the attention his earlier work garnered (although it builds to some extent on it), it is unfailingly entertaining, instructive, and undoubtingly very important as the recent work by Duckworth & Seligman, 2005, also suggests.

This chapter, at any case, might not have materialized without the authors' having benefited from reading Schelling's ruminations on the tactics and techniques that allow us to outsmart ourselves.

Appendix

Self –command in Adam Smith's *Theory of Moral Sentiments*[10]

> "When our passive feelings are almost as sordid and selfish, how comes it that our active principles should often be so generous and so noble? … It is not the soft power of humanity, it is not the feeble spark of benevolence which Nature has lighted up in the human heart, that is thus capable of counteracting the strongest impulses of self-love" (Smith 1982 [1759], 137).

According to Adam Smith, self-command is the practice of using "active principles" to moderate one's actions when the "passive feelings" that would motivate them are too strong, too violent or would otherwise compel one to act inappropriately. Passive feelings are the passions which we can't easily control, which are felt almost mechanically, and which in themselves motivate actions: the bodily passions such as sexual appetite -- "naturally the most furious of all passions" (lit.cit., p. 28)-- or the unsocial passions such as "hatred and resentment, with all their different modifications" (lit.cit., p. 33). While Smith's discussion of self-command is often more concerned with the impact of a failure of self-command on third parties, the basic issue of how to control one's temper, or various appetites is the same with which Schelling was concerned.

In the opening quotation, Smith continued as follows: "It is a stronger power, a more forcible motive, which asserts itself upon such occasions. It is reason, principle, conscience, the inhabitant of the breast, the great judge and arbiter of our conduct. … " (Smith 1982 [1759], 137). It is reason, principle, and conscience that constitutes the "active principles" that keep the "passive feelings" in check. We cannot do much about most of our passions, our passive feelings. It is human nature to feel even the worst of them. We can do something about our actions, however. Though we may be pulled by urgent desires -- that sexual appetite (that might keep us from finishing that tax declaration), for example, or that quite ordinary appetite for cake, or nicotine, or tv (all of which might prevent us, alone or in combination,

from becoming those well-shaped fighting machines that live to eternity) --, reason often tells us that it would not be in our interest to follow them because we might incur too high a cost. In such cases, we must rely on our active principles in order to resist our short-run impulses.

So far so good. Yet how do our active principles come about? To model "the constant necessity, of modeling, or of endeavouring to model not only his outward conduct and behaviour, but, as much as he can, even his inward sentiments and feelings" (lit.cit., p. 147), Smith suggested that the problem consisted of two different "selves" seeking satisfaction: The Man of Today and the Man of Yesterday. Man Yesterday is the person who was inflamed by passion and about to act; Man Today is the person who afterwards might have to face the consequences of that action.
Says Smith, "The man of to-day is no longer agitated by the same passions which distracted the man of yesterday: and when the paroxysm of emotion, in the same manner as when the paroxysm of distress, is fairly over we can identify ourselves, as it were, with the ideal man within the breast, … " (lit.cit., 157-8).

The Man Today exists both as a real person after the Man Yesterday and as an imaginary construct within the mind of the Man Yesterday. Smith makes clear that even as the Man Yesterday is in the midst of the most furious unsocial passions, "his own mind forebodes" (p. 161) the consequences of succumbing to them. This notion of the imaginary construct allows Meardon & Ortmann (1996) to downplay the intertemporal aspect of the Man Yesterday and the Man Today and to model the game of self-command as a stage game whose participants act simultaneously.

Explaining how Smith imagined the signal extraction process of what constitutes praise-worthiness and what constitutes blame-worthiness and the convergence of the partial spectator to impartial spectator (= "the ideal man within the breast" who knows what society, and may be some higher instance considers praise-worthy and blame-worthy), Meardon & Ortmann (1996) argue the intrapersonal struggle can be modeled as a binary choice game in

[10] This appendix draws heavily on Meardon & Ortmann (1996, 1996a).

which Man Yesterday has the two options of acting "properly" or "improperly", and Man Today has the options to evaluate Man Yesterday's action either "routinely" or "really" (at a high emotional cost). The authors show that this scenario lends itself naturally to a 2x2 strategic form game matrix in which the Man Yesterday is the row player and the Man Today is the column player. The authors also rationalize in detail the following payoffs that transform the 2x2 strategic form matrix into one that is well-known from analyses of quality or effort assurance games (e.g., Kreps 1990) and one that formalizes Elster's astute remark about self-image being "an internal reputation effect" (Elster 1985, 265). Smith, in other words, conceptualized self-command as an equilibrium sustained by internal reputation effects.

This is the payoff matrix that Meardon & Ortmann (1996) derive from Smith's writings:

Matrix 1: The game of self-command

		Man Today	
		Routine	real
Man Yesterday	proper	1,1	0,0
	Improper	2,-1	0,0

It is a well-established result in the game theory literature (e.g., Kreps 1990, 65 – 77) that the outcome of a quality or effort assurance, or reputation game depends crucially on how often it is played. Specifically, for reasonably low rates of time preference, it is easy to show that a Nash equilibrium of an indefinitely repeated game is Pareto optimal (i.e., ends up being the upper left cell in the payoff matrix that represents the game of self-command). In contrast, in a one-shot game the outcome is likely to be the lower left or right cell (the right cell representing the equilibrium outcome).

The intuition for this result is straightforward.[11] In the upper left corner Man Today and Man Yesterday stand to collect "1" each in every round of the indefinitely repeated game. Especially if future payoffs matter a lot (i.e., if the rate of time preference is reasonably low), the sum that Man Today and Man Yesterday can thus collect might be considerable and enable the two selfs to align their interest. In a one-shot game that interest might diverge for the simple reason that, even if Man Today and Man Yesterday were to agree on the Pareto optimal outcome in the upper left cell of the payoff matrix, given the payoff in the lower left cell there would be a strong incentive for Man Today to give in to the temptation of a payoff of "2" and therefore to renege on the agreement. This would make Man Yesterday better off but Man Today much worse off . (Note that the sum of the two payoffs in the lower left cell of the payoff matrix is not Pareto optimal.) Of course, Man Today might anticipate Man Yesterday's switch of actions from "proper" to "improper" and therefore himself move from "routine" to "real" evaluation, leaving the two of them in the aggregate even worse off (with Man Today, compared to the lower left cell, being a bit better off and Man Yesterday much worse off) than before as they would end up in the lower right cell of the game of self-command. It is this threat of people ending up in the lower right cell rather than the upper left that ultimately, in an indefinitely repeated game, brings about the Pareto optimal outcome.

Of course, it does so only under certain assumptions of payoffs and discount rates and rationality. Smith was very much aware that the knowledge of when and how to use the active principles is not instilled in every person. Such knowledge requires a reasonable ability to gauge present and future pay-offs that is obtained over time, perhaps with great effort or may be instances of trial and error: "A very young child has no self-command." wrote Smith (a results convincingly demonstrated since then experimentally, for example, through the brilliant marshmallow tests that Mischel, 1968, conducted with relatively low stakes), but as it ages the child "enters into the great school of self-command, it studies to be more and more master of itself, and begins to exercise over its own feelings a discipline which the practice of the longest life is very seldom sufficient to bring to complete perfection" (Smith 1982, p. 145).

[11] The formal argument can be found in Kreps (1990) or Meardon & Ortmann (1996).

But it might, even without the kind of tricks that Schelling has suggested as strategy: “The man of real constancy and firmness[12], the wise and just man who has been thoroughly bred in the great school of self-command, in the bustle and business of the world, … maintains this control of his passive feelings upon all occasions; … He has never dared to forget for one moment the judgement which the impartial spectator would pass upon his sentiments and conduct. He has never dared to suffer from the man from within the breast to be absent one moment from his attention. With the eyes of this great inmate he has always been accustomed to regard whatever relates to himself. This habit has become perfectly familiar to him. He has been in the constant practice, and, indeed, under the constant necessity, of modeling, or of endeavoring to model, not only his outward conduct and behaviour, but, as much as he can, even his inward sentiments and feelings, according to those of this awful and respectable judge. He does not merely affect the sentiments of the impartial spectator. He really adopts them“ (Smith 1982, 146/7).

Of course, that leaves many people who have not “been thoroughly bred in the great school of self-command” and therefore have trouble gauging the relevant trade-offs; they lack in other words the “real constancy and firmness”. These people may well benefit from Schelling’s arsenal of self-commitment tricks that, rather than rely on reputational self-commitments, provides clever mechanisms that make such reputational self-commitments unnecessary. Palacios-Huerta (2003) calls these reputational self-commitments “internal commitment technologies.” (249), which may be a useful short-hand to distinguish them from Schelling’s external commitment technologies.

The above summary of Smith’s discussion of self-command should make clear that Schelling was less than forthcoming about where the idea of the two time-consistent selves so

[12] In his Richard T. Ely lecture to the American Economic Association, Schelling (1984, p. 4) took at cheap shot at Smith for his, from today’s perspective, politically not correct language. It strikes us as an interesting issue what is more offensive: Someone in the eighteenth century talking about what he sees as gender-specific behaviors, or someone in 1984 being less than forthcoming about where his ideas come from.

prominent a point of departure in his ruminations on self-command came from. Smith was – without doubt – talking exactly about the same problem that Schelling was talking about, and he used the same conceptualization that Schelling used.

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