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Using Commitment Contracts to Further Ex Ante Freedoms: The Twin Problems of Substitution and Ego Depletion

Ian Ayres

For an economist to think about the project of furthering individual freedom, it is natural to think about the unavoidable tension between ex ante freedom. When should individuals have the right to restrict their future rights?

I frequently ask my contracts students whether the spousal notification ruling in *Casey* should just be a default rule.² By this, I mean whether married woman have the option to contract for a duty to notify her spouse that she is pregnant and plans to have an abortion (or in the alternative certify under oath that she believes such disclosure will cause her spouse or someone else to inflict bodily injury on her). Does the constitution prohibit enforcement of such a contract, even if a breach carries with it minimal liquidated damages? Many of my students argue that enforcement of such a contract would unfairly burden women’s procreative freedom. And from an ex post perspective, the contract — like all contracts — restricts or burdens choice. But from an ex ante perspective, giving women the option to enter into these contracts expands their freedom. By giving women a way to more credibly commit to notification, you are enhancing their ability to bargain for the marriage structure that best suits their relationship with their potential husbands.

As a pedagogical provocateur, I often chide the students who stubbornly cling to the ex post perspective. Why aren’t they “pro-choice” when it comes to contracting? Or more simply, why do they hate freedom?

There are many, many problems with taking a naïve embrace of simply maximizing ex ante freedom. In this essay, I focus on just two related problems with a full-throated embrace of the ex ante perspective — the twin problems of substitution and ego depletion. I am not a neutral commentator on these issues. I am a co-founder of a for-profit commitment service, [www.stickK.com](http://www.stickK.com), where individuals enter into binding contracts putting money at risk if they fail to meet their goals. [In fact, it might be possible for spouses to implement a *Casey*-like commitment using the stickK platform.] So even though this essay is centrally about the limits of the ex ante perspective, reasonable readers should worry that I still have my thumb on the scale in favor making enforceable commitments.

A Plan for Attaining “Moral Perfection”

¹ William K. Townsend Professor, Yale Law School. This article is derived from chapter 7 of my book, Carrots and Sticks, and formed a part of the basis for my Meador Lecture, which I delivered at the University of Alabama law school on April 19, 2010. IAN AYRES, CARROTS AND STICKS: UNLOCK THE POWER OF INCENTIVES TO GET THINGS DONE 145-65 (2010).

Imagine a grim world where one resolved to perfect every aspect one’s behavior and backed up the resolution with strict accounting and intervention. This experiment has already been run by none other than Benjamin Franklin.3

As a young man, Franklin “conceiv’d the bold and arduous project of arriving at moral perfection”:

I wish’d to live without committing any fault at any time; . . . As I knew, or thought I knew, what was right and wrong, I did not see why I might not always do the one and avoid the other.4

While Franklin was a man of seemingly unbounded abilities, he soon found that perfection was not easily obtained. He noted:

…I had undertaken a task of more difficulty than I had imagined. While my care was employ’d in guarding against one fault, I was often surprised by another; habit took the advantage of inattention; inclination was sometimes too strong for reason. I concluded, at length, that the mere speculative conviction that it was our interest to be completely virtuous, was not sufficient to prevent our slipping . . . .5

Franklin’s experience of curtailing one fault or bad habit only to see it supplanted by another is still relevant today. For instance, when I commit to cut down on my TV watching, I see a pronounced increase in my (mis)use of the Internet. There is increasing evidence of “addiction transfer” with regard to much more serious problems.6 According to The Betty Ford Center, “about 25 percent of alcoholics who relapse switch to a new drug” – including opiates. We’ve heard cases of weaning addicts away from heroin with methadone replacement therapy.7 But these attempts to wean addicts away from alcohol can sometimes lead to substitution toward more destructive addictions.

This substitution problem seems to be particularly pronounced after obese patients undergo bariatric weight-loss surgery. Therapists at certain weight-loss centers have estimated that somewhere between 20 and 30 percent of bariatric surgery patients turn to some other compulsive disorder after surgery. The list includes smoking, gambling and even compulsive shopping. Alcohol abuse is a particular problem – possibly because alcohol is high in calories and can pass quickly through the surgically reduced stomach. As of now, these studies are small and preliminary, but with more than 100,000 (and counting) new bariatric patients each year, addiction transference has become a standard part of pre-operational counseling.

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4 Id. at 66.
5 Id.
Thus, we see that before committing to stop one bad habit, we should consider the chances that successfully quitting might promote other bad habits. Even with some substitution, the game can still be worth the candle. People who successfully quit smoking often gain weight, but still add years to their expected longevity. And there’s always the possibility of taking up separate arms against the substitute behaviors. In *Quitters, Inc.*, Stephen King imagines that 73% of clients who quit smoking start gaining weight. His goons helpfully ensure that these former smokers stay trim by threatening to cut off their spouse’s little finger if their weight ever drifts above a specified number at monthly weigh-ins. This mandatory added service is not disclosed to clients until they are well into their smoking treatments.8

But Benjamin Franklin took on the burden of multiple commitments completely of his own free will. When he found that he was failing in his quest for moral perfection, he endeavored to construct a list of 13 virtues – temperance, silence, order, resolution, frugality, industry, sincerity, justice, moderation, cleanliness, tranquility, chastity and humility (“imitate Jesus and Socrates”) – that he hoped to one day master. His hubris is remarkable. *The New Yorker* once ran a cartoon picture of James Joyce’s refrigerator showing a “to do” list that mixed together such ordinary tasks as “call bank” and “dry cleaner” with tasks like “forge in the smithy of my soul the uncreated conscience of my race.”9 Franklin, on a personal level, was attempting something equally audacious. Yet, while the point of the cartoon was to satirize the idea of a refrigerator list with such abstract goals, Franklin did in fact keep a daily ledger of his progress:

I made a little book, in which I allotted a page for each of the virtues. I rul’d each page with red ink, so as to have seven columns, one for each day of the week, marking each column with a letter for the day. I cross’d these columns with thirteen red lines, marking the beginning of each line with the first letter of one of the virtues, on which line and in its proper column, I might mark by a little black spot, every fault I found upon examination to have been committed respecting that virtue upon that day.10

It is slightly embarrassing to make daily spreadsheet entries on 5 attributes of my life. Franklin, however, hand-drew his own spreadsheet to keep track of 13 dimensions of his life. After his initial failure at achieving outright moral perfection, Franklin chose to divide and conquer his individual vices (while simultaneously keeping track of the degree of backsliding on other dimensions):

I determined to give a week’s strict attention to each of the virtues successively. Thus, in the first week, my great guard was to avoid every the least offence against Temperance, leaving the other virtues to their ordinary chance, only marking every evening the faults of the day. Thus, if in the first week I could keep my first line, marked T, clear of spots, I suppos’d the habit of that virtue so much strengthen’d and its opposite weaken’d, that I might venture extending my attention to include the next, and for the following week keep both lines clear of

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10 FRANKLIN, supra note 3, at 67.
spots. Proceeding thus to the last, I could go thro’ a course compleat in thirteen weeks, and four courses in a year.\textsuperscript{11}

Franklin kept at it for several years. He never did end up with a clean book. The big question is whether his efforts in trying to keep these commitments of journaling day after day, year after year, were worth the cost.

**Should President Obama Keep Smoking?**

Of all of Franklin’s goals, his attempts to maintain order particularly vexed him and made him question whether the game was worth the candle:

\begin{quote}
This [virtue] cost me so much painful attention, and my faults in it vexed me so much, and I made so little progress in amendment, and had such frequent relapses, that I was almost ready to give up the attempt, and content myself with a faulty character in that respect.\textsuperscript{12}
\end{quote}

Franklin likened his endeavor to a man who tried to convince a smith to grind an ax so that the whole of its surface would be “as bright as the edge.”\textsuperscript{13} The smith agreed, so long as the man would turn the grindstone. After turning the wheel at length and only seeing minor results, the man broke off, saying, “I think I like a speckled ax best.” Who can imagine how many more conveniences we might have today if the inventor of the lightning rod, the library and the Franklin stove had spent less time trying to order his papers.

Franklin’s fruitless efforts come to mind when I selfishly consider whether or not now is the appropriate time for President Obama to kick his smoking habit. A poorly kept secret is that our president is only “95% cured” and has admitted that there are still times he “mess[es] up” and smokes a cigarette.\textsuperscript{14} At a time when our country faces extraordinary challenges, both at home and abroad, is it prudent for the Commander-in-chief to devote his limited energies to kicking the habit – even if smoking means he can expect to die sooner?\textsuperscript{15}

\textsuperscript{11} Id. at 68.
\textsuperscript{12} Id. at 71.
\textsuperscript{13} Id.
This is cause for concern because there is increasing evidence that self-control is a limited resource that can be depleted if over-used. It doesn’t take a Ph.D. to determine that resisting eating a warm chocolate chip cookie is significantly harder than to resist eating a radish for most people. But psychologists Roy Baumeister, Ellen Bratslavsky, Mark Muraven and Dianne M. Tice used people’s weakness for chocolate to test whether exerting more self-control would make it harder to follow through on other tasks.\textsuperscript{16} Baumeister, et al., found that students who were forced resist eating chocolate chip cookies were likely to give up twice as fast when they were then asked to solve an unsolvable puzzle relative to students who had to resist eating a radish.

Moreover, Baumeister and a cadre of coauthors have done dozens of studies showing that this notion of “ego depletion” can make it more difficult to succeed in subsequent tasks requiring self-control. For example, it’s hard for me not to laugh at Robin Williams’s comedy or to resist crying after seeing Deborah Winger say goodbye to her children in \textit{Terms of Endearment}. Baumeister and his coauthors believe that it is probably hard for other people too. They showed these clips of Williams and Winger to a group of subjects and then asked them to try to solve as many anagrams as they could in 10 minutes.\textsuperscript{17} One half of the subjects were asked to exercise some self-control and not display any emotion when watching the film clips. Meanwhile, the other half were told “to let their emotions flow” while watching the film. Again, Baumeister found that people who had to exert self-control during one task (suppressing emotion), had much more trouble exerting self-control (diligently following through) during another. People who suppressed their urge to laugh and cry solved on average 4.9 anagram problems while those who were not constrained solved 7.3 problems.

Ego depletion might undermine not just problem-solving persistence, but also honesty. In yet another experiment, Baumeister and his colleagues proceeded to deplete subjects’ self-regulation capacity by making them write an essay omitting words containing certain letters.\textsuperscript{18} He subsequently tested their honesty by paying them 25 cents for every correct question on a self-graded math quiz. While half of the students had an essay that specified that they could not use the common letters of A or N (thus requiring more self-regulation), the other half had the much easier task of writing an essay that avoided words with the letters X and Z. Baumeister then finds that the more depleted students were less honest when they claimed their prize. Students who had completed the more arduous (no A or N) task claimed 60% more math prizes than the students who had completed the less arduous (no X or Z) task. Thanks to the beauty of random assignment, we can be quite confident that the depleted students were not innately more adept at math problems than the less depleted students.

These studies advise us not to take on too many commitments at once. Perhaps it could be the case that Ben Franklin found himself slipping up on sincerity and humility when he was concentrating on order simply because he was misallocating a scarce resource: his willpower. Ego depletion explains a lot about why even successful attempts to control one’s bad habits often lead to substitution toward other, seemingly unrelated, addictions. With so much else demanded of President Obama, now may not be the best time for him to try to kick the habit.

\textsuperscript{16} See Baumeister, et al., \textit{Ego Depletion}, supra note 15.
\textsuperscript{17} \textit{Id.} at 1258.
\textsuperscript{18} See Nicole L. Mead, et al., \textit{Too Tired}, supra note 15.
Or perhaps, if he does, he might consider drinking some lemonade. The idea of a weakened ego being less able to reign in the baser urges of the id is a powerful, if slightly dated, metaphor in this post-Freudian world. But Baumeister and several coauthors have more recently shown that something as concrete as blood glucose levels may underlay the ego depletion metaphor, more specifically, that “acts of self-control reduce blood glucose levels.” He asked dozens of subjects to watch a six minute video of a woman talking while common words (e.g., hat, hair) individually came onto the corner of the screen for 10 seconds each. The glucose levels of the subjects were measured before and after each of the screenings. To manipulate ego depletion, the experiment randomly told half of the subjects to ignore the words and focus their attention solely on the woman, while the other half (the control group) was told to watch the video as it would normally. The control group showed no decline in glucose after watching the video. However, for the group that was told to control their attention, glucose levels fell on average by 6% in their post-video measurement. This study shows that just six minutes of self-control is enough to dampen your glucose levels. And these subjects with depleted glucose subsequently displayed trouble exerting self-control. In another experiment, the psychologists asked the same two groups to complete 80 Stroop tasks. The Stroop test (named after John Ridley Stroop) is one of the best-known and elegant tests of self control. Subjects are merely asked to say out loud the color of the letters they are shown. What makes it difficult is that the letters spell out a color that is different from the color of the letters used to make the word. For example, if you were given the word:

GREEN

you should say “black,” because that is the color of the font. It requires self-control to turn off our reading impulse and to respond solely to the color of the actual letters. Sure enough, Baumeister finds that the subjects who were ego and glucose depleted from trying to ignore the words on the TV screen had a harder time than the randomly selected control group at saying the color of the font, instead of the word being written.

I wasn’t kidding above, when I suggested that a glass of lemonade might help. Baumeister et al. reran their experiment, but started by having all the subjects drink a glass of lemonade. Unbeknownst to them, half of the glasses were sweetened with Splenda artificial sweetener and had 0 calories while half the glasses were sweetened with real sugar and delivered 140 calories of glucose to the subjects. They find that simply drinking a glass of real lemonade eliminated the depletion effect. The subjects who drank the Splenda-laced placebo continued to have trouble controlling their urge to read the letters instead of identifying the colors. But the subjects who drank some sugar water were able to hit their non-depleted levels of accuracy. Perhaps this explains why we eat a bit more when they are trying to quit smoking – it is possible that we are indirectly trying to increase our resolve by boosting our blood sugar.

Then again, a bit of ego depletion may be good for the soul. Baumeister and his colleagues are beginning to think that an individual’s capacity for self-control is like a muscle that can be strengthened with regular exercise. While muscles exhibit fatigue immediately after exercise,
those same muscles become stronger after a little bit of rest. Researchers have started to ask if the same thing might be true of our capacity for self control.

One of Baumeister’s coauthors, Megan Oaten, an Australian psychologist from Macquarie University, provided more realistic exercise evidence following a 4-month training program in financial self-restraint:

Each participant met with the experimenter, individually, at the start, and together they reviewed the participant’s bills and spending habits and devised a personal money management plan. Each participant was issued a spending diary and other logs to improve record keeping, both in order to improve adherence to the money self-regulation plan and to enable the researchers to keep track of behavior and performance. Most participants improved substantially in regulating their use of money. Though their incomes did not increase, they spent less and saved more. On average they improved each month and ended up more than quadrupling their savings rate (from 8% to 38% of income).22

But what is truly amazing is the fact that randomly selected subjects who took the money management training exhibited less ego depletion when they were subsequently tested. Unlike their untrained counterparts, they were able to withstand a white-elephant thought suppression task and still resiliently show self-control. In this instance, the task was to ignore a comedy video while simultaneously being asked to follow a electronic shell on a screen.

The exercise research is still in its infancy. But we have hope that humans can learn to walk and chew gum at the same time. The famous “marshmallow experiment” showed that four-year-olds who could wait a bit longer before caving in and eating a marshmallow temptation ended up with higher average SAT scores and a better ability to concentrate.23 While this suggests that self restraint is intrinsic, it just may be possible to train kids (as well as adults) to have more will power. James Heckman and his coauthors argue, in a forthcoming book, that we might be able to enhance children’s persistence and allied “soft skills.”24

The initial empiricism on ego depletion suggests that people like our President should think twice before taking on too many commitments at once. But the exercise results suggest that

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22 Baumeister, et al., Self-Regulation, supra note 15, at 1782-83. For the original Oaten study, see Megan Oaten & Ken Cheng, Improvements in self-control from financial monitoring, 28 J. Econ. Psychol. 487 (2007)
going out of your way to exercise self-restraint – even on arbitrary low-stakes tasks – may make it easier for us to follow through when something important comes along. Under this reading, ‘training’ to be healthier with regard to smoking might help Obama stay the course in fighting for health care reform.

This exercise idea would have been quite congenial to Franklin’s own way of thinking. His long term, systematic efforts at moral perfection look very much like training. As to his results, Franklin concluded,

[O]n the whole, tho’ I never arrived at the perfection I had been so ambitious of obtaining, but fell far short of it, yet I was, by the endeavour, a better and a happier man than I otherwise should have been if I had not attempted it; as those who aim at perfect writing by imitating the engraved copies, tho’ they never reach the wish’d-for excellence of those copies, their hand is mended by the endeavor, and is tolerable while it continues fair and legible.25

Ego Depletion and Discrimination26

The idea of ego depletion has even been applied to discrimination. The basis for this set of experiments is that people may have to use up some of their self-control resources when they interact with people of a different race. Calling, once again, on Baumeister and his colleagues, who find that white subjects experienced a fall in glucose blood levels after they were asked to speak with a black experimenter and express their opinions about racial profiling and affirmative action.27 Subjects did not experience the same effect across the board. Subjects who had obtained higher scores on an instrument designed to measure “internal motivation to respond without prejudice” had no substantial drop in glucose. Thus, their finding is that people with an independent commitment to respond without prejudice would not have to expend the same amount of resources in a difficult conversation with a person of another race, but that people with a lower commitment would have to use up far more resources. The difficulty of speaking about race would be augmented by the fact that they were discussing the topic with someone of a different race. These same low-commitment types chillingly showed no glucose drop when they spoke about affirmative action or racial profiling with members of their own race.

Baumeister has shown that ego depletion can also arise in trying to suppress the urge to use stereotypes when describing a person: “Sammy.”28 A different set of subjects was shown a picture of a young man, named Sammy, who was described as gay. The subjects were asked to write an essay describing what Sammy does in a typical day, without “…make[ing] any mention of stereotypes or any activities they believed homosexuals tend to do.” Baumeister also had the subjects preliminarily answer the HATH (Heterosexual Attitudes Toward Homosexuals) instrument to again try to capture their “internal motivation to respond without prejudice.”

25 FRANKLIN, supra note 3, at 71.
evaluation found that the subjects were generally successful in keeping with the assignment and found no statistical difference across the essays between subjects with higher or lower motivations to respond without prejudice. However, the low motivation subjects had a harder time solving anagrams after the essay-writing than they had before. People with a lower internal motivation to respond without prejudice seem to have used more resources to suppress the urge to include stereotypes and thus, had a harder time following through in solving the seemingly unrelated anagram task that required concentration and a different kind of stick-to-it-ive-ness.

Baumeister and his colleagues have been able to show in a different study that a few spoonfuls of sugar delivered in sweetened lemonade or that a couple of weeks of training on a self-control task can help those with low motivation avoid ego depletion. But it appears to me that the more interesting possibility suggested by these results is that it might be possible to use commitment contracts to manipulate the level of effort expended in self-regulating choice. The exercise results suggest that people, like Benjamin Franklin, can increase their capacity for self-regulation. However, the motivation results suggest that people might be able to reduce their demand for self-regulation. People who have an intrinsic commitment to respond without prejudice didn’t have to use up their limited capacity of willpower in deciding whether to suppress the urge to stereotype.

People who have internally committed not to steal don’t have to fret about whether the coast is clear so that they can pilfer from the cash register. It might be that commitment contracts can reduce ego depletion by taking some questions off the table. That’s the core difference between commitments and mere incentives. As I discuss in “Carrots and Sticks,” incentives merely try to guide future choice, but there is still a choice to be made. Commitment contracts, by threatening a carrot that is too good to refuse or a stick that is too bad to accept, take a future choice off the table. The threat, for example, of forfeiting a substantial sum of money to a cause that you detest may eliminate any question that you will smoke again and hence not force you to expend limited self-regulatory capacity in the struggle to decide.

At the moment, this is pure speculation. I’m hoping that the incredibly prolific Professor Baumeister will test to see if it is true. But the takeaway is that before taking on another commitment, it is worthwhile to consider whether it will aid or undermine your efforts on the follow through on other aspects of your plan for the good life. The exercise story counsels toward even seemingly arbitrary impositions of self-control to help stay in training. But the dizzying examples of both substitution and ego depletion suggest, as Franklin learned long ago, that it might be better not to take on too much, too soon.

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29 Id.
30 AYRES, supra note 1, at 22-44.