Procrastination and the Extended Will: Extended Cut

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Less than a decade ago, "rational choice theory" seemed oddly impervious to criticism. Hundreds of books, articles and studies were published every year, attacking the theory from every angle, yet it continued to attract new converts. How times have changed! The "anomalies" that Richard Thaler once blithely cataloged for the *Journal of Economic Perspectives* are now widely regarded, not as curious deviations from the norm, but as falsifying counterexamples to the entire project of neoclassical economics. The work of experimental game theorists has perhaps been the most influential in showing that people do not maximize expected utility, in any plausible sense of the terms "maximize," "expected," or "utility." The evidence is so overwhelming and incontrovertible that, by the time one gets to the end of a book like Dan Ariely's *Predictably Irrational,*[1] it begins to feel like piling on. The suggestion is pretty clear: not only are people not as rational as decision and game theorists have traditionally taken them to be, they are not even as rational as they themselves take themselves to be.

This conclusion, however, is not self-evident. The standard interpretation of these findings is that people are irrational: their estimation of probabilities is vulnerable to framing effects, their treatment of (equivalent) losses and gains is asymmetric, their choices violate the sure-thing principle, they discount the future hyperbolically, and so on. Indeed, after surveying the experimental findings, one begins to wonder how people manage to get on in their daily lives at all, given the seriousness and ubiquity of these deliberative pathologies. And yet, most people do manage to get on, in some form or another. This in itself suggests an alternative interpretation of the findings. What experimental game theorists may have demonstrated is not that people are systematically irrational, but that human rationality is heavily *scaffolded*. Remove the scaffolding, and they don't do very well. People are able to get on because they "offload" an enormous amount of practical reasoning onto their environment. As a result, when they are put in novel or unfamiliar environments, they perform very poorly even on apparently simple tasks.

This observation is supported by recent empirically informed shifts in philosophy of mind

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1   Dan Ariely, *Predictably Irrational: The Hidden Forces that Shape Our Decisions.*

toward a view of cognition as (to cite the current slogan) "embodied, embedded, enactive, extended." Andy Clark, for example, has argued that "advanced cognition depends crucially on our ability to *dissipate* reasoning: to diffuse achieved knowledge and practical wisdom through complex social structures, and to reduce the loads on individual brains by locating those brains in complex webs of linguistic, social, political and institutional constraints."[2] Clark and others have made a very plausible case for the idea that a proper assessment of human cognitive competence must include environmental components. To limit our attention to what lies within the skin-skull boundary is, in effect, to miss the big story on human rationality. Insofar as we are rational, it is often because of our ingenuity at developing "work-arounds" to the glitches in the fast-and-frugal heuristic problem-solving capabilities that natural selection has equipped us with.[3] And these work-arounds often involve a detour through the environment (so-called "offloading" of cognitive burdens). This is an instance of the now widely accepted view that the evolutionary success of humans is the result not merely of adaptations in our biological endowment but also – and perhaps more significantly – in our linguistic, social, and material culture.

When it comes to practical rationality, things are no different. Yet in many discussions of the "the will," there is still a tendency to put too much emphasis on what goes on inside the agent's head. For example, the self-controlled person is usually seen as one who has a capacity to exercise tremendous will-power, not as one who is able to organize his life in such a way that he is never called upon to exercise tremendous will-power. This internalist bias is liable to make the various "glitches" in the structure of the will – such as the temporary preference reversals induced by hyperbolic discounting – seem much more threatening to the coherence of the agent's plans than they actually are. For example, everyone procrastinates on occasion. Yet only 15-20% of adults describe themselves as "chronic procrastinators," or find that the tendency to procrastinate interferes with their ability to achieve major life goals.[4] This is actually *lower* than one might expect, simply from looking at the psychological literature on discounting.

Our objective in this paper is to articulate this conception of "the extended will" more clearly, using the strategies that people employ to overcome procrastination for the central set of

2   Andy Clark, *Being There: Putting Brain, Body, and World Together Again*, p. 180. See also, for example, Donald A. Norman, *Things that Make Us Smart*.

3   Gary Marcus, *Kluge: The Haphazard Construction of the Human Mind*.

4   Piers Steel, "The Nature of Procrastination," 65.

examples. Procrastination, in our view, constitutes a particular type of self-control problem, one that is particularly amenable to philosophical reflection, not only because of the high volume of psychological research on the subject, but also because of the large quantity of "self-help" literature in circulation – which provides an invaluable perspective on the everyday strategies that people use in order to defeat (or better yet, circumvent) this type of self-defeating behavior pattern. In general, what we find is that the internalist bias that permeates discussions of the will gives rise to a set of practical recommendations that overemphasize changing the way that one *thinks* about a task, while ignoring the much richer set of strategies that are available in the realm of environmental scaffolding.

1. From Extended Mind to Extended Will

Consider the following, everyday scene (recently witnessed by one of us): Two students are standing in the hall, talking to one another. One of them is trying to give directions, but is evidently having some difficulty. "Okay," she says, turning to the wall, "suppose this is Greenwood..." (as she does this, she traces her finger vertically up the wall, along the mortar between two bricks) "...and this is Gerrard...." (she then traces her finger horizontally, across the top of the brick), "...here is the park," she said (poking the brick), "and I'm just over here." "Oh okay, I get it," says her friend, and they turn back to face one another.

This type of interaction is exceedingly common. So common, in fact, that the resulting sense of familiarity can easily lead us to ignore the singularity and importance of the cognitive abilities that are on display. What this interaction reveals is the extraordinary ingenuity of the human mind at colonizing elements of its environment, in order to press them into service as aids to cognition. Natural language is exceedingly good at conveying relational information, but very weak when it comes to codifying and communicating spatial information. Thus we often find ourselves struggling to describe a location. Instead of telling people where something is, we usually just give directions for getting there. The latter can be constructed in a linear form, as a sequence of actions that need to be performed. When that doesn't work, we draw pictures. And when that isn't practicable, we do what these two students did, which is find something that looks like the sort of picture we would draw and use that. What is noteworthy about the episode just described is not only the ease with which the nearby wall was transformed into a tool for

communication, but the rapidity with which it was subsequently discarded, once it had served its purpose.

In the same way that we use features of the external world as an aid to communication, we also use them as an aid to cognition. For example, the type of rapid reasoning that we are able to achieve through deployment of heuristics appears to be unable to hold intermediate conclusions in working memory, in order to construct chains of inference. Consider the following syllogism:

> Everyone is prejudiced against prejudiced people.
> Anne is prejudiced against Beth
> Does it follow that Chuck is prejudiced against Di?[5]

The intuitive response is to say that the conclusion does not follow. It is only through conscious, methodical working through of the problem that one can see how it does follow – because Anne is prejudiced, everyone is prejudiced against Anne, which means that everyone (including Chuck) is prejudiced against everyone (including Di). Unfortunately, our working memory is not particularly strong. This may have a lot to do with the "unnatural" structure of our conscious reasoning. As Daniel Dennett argues, "conscious human minds are more-or-less serial virtual machines implemented – inefficiently – on the parallel hardware that evolution has provided for us."[6] One aspect of this inefficiency is the high level of attentional resources that are required in order to undertake conscious reasoning. Our inability to hold large numbers of intermediate conclusions in working memory is a major part of this story.

To take just one example, most of us can do multiplication "in our heads" with numbers up to 10, but cannot go beyond that – this despite the fact that we have all mastered a procedure (so-called "long multiplication") that transforms the larger problem into a set of smaller problems, each of which we are capable of solving in our head (e.g., to multiply 43 by 87, first you multiply 7 by 3, then you multiply 7 by 4, etc.) Each of these subproblems we can easily solve in our heads, but the reason we can't solve the problem as a whole is that the solution to these four subproblems must be kept in working memory in order to resolve the final subproblem, which involves addition

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5   P.N. Johnson-Laird, *How We Reason*, 69.

6   Daniel Dennett, *Consciousness Explained*, 216.

of the four products. Most of us are simply not able to remember four multiple-digit numbers like this, in order to perform a final operation on them.

Hence the most common form of "offloading" we perform is to transfer segments of our working memory onto the environment. We write things down. Obviously, the ability to encode things symbolically for this purpose constitutes the major mechanism through which language (and a number-writing system) enhances our innate cognitive abilities. Indeed, when trying to characterize human beings as computational systems, the difference between "person" and "person with pencil and paper," is vast. It is only when we are embedded in our familiar system of artifacts that we can do even moderately sophisticated arithmetic.

In this respect the "offloading" metaphor is slightly misleading. When we "dump" the contents of our working memory onto the environment (e.g. by writing things down) we are not just doing so for purposes of storage. We park them in a form in which we are still capable of performing computations upon it. Thus features of the environment in which this information is embodied become an active component of our cognitive system. (To use a computer metaphor, features of the environment often discharge the function of processor register – typically regarded as part of CPU function – as well as call stack, main memory, and long-term storage.)

Another important role of the environment is that we often use it to "redeploy" cognitive resources. Many of our most sophisticated cognitive abilities are unfortunately tailored to the performance of a very narrow set of tasks. For example, we find information easier to remember when it is presented in certain formats, rather than others.[7] Thus one of the oldest techniques of memory-enhancement is, when trying to memorize a list, to tell a story in which the items show up in sequence. Or to map the terms onto visual cues, and then imagine a sequence of events that generates these cues. In terms of the amount of brute data we are able to handle, probably the most powerful set of computational mechanisms we have are in the domain of visual processing. Thus converting linguistically coded information into some sort of visual representation is often at the heart of these enhancement techniques. Furthermore, the visual-spatial system has its own working memory, separate from the system governing linguistically formulated information.[8] Thus one can enhance one's working memory by "picturing" certain types of information.

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7   Marcus, *Kluge*, pp. 34-36.

8   Kenneth J. Gilhooly, "Working Memory and Reasoning," pp. 50-51.

In some cases, linguistically coded information can be translated into a visual format simply through an act of the imagination. But more typically, we create a visual representation in the external world. We draw decision trees, flow charts, and mind maps, build scale models, attach color labels, line things up or stack them, and so on. Of course, once we become properly habituated to using an external system, it may becomes internalized, so that we can perform the relevant transformation inside our head, much in the way that children learn first to speak out loud and only later become capable of thinking things through silently, in their heads.[9] For example, older Chinese merchants who have been trained in the use of an abacus are often able to do extensive computations without the benefit of the device – although you can often see them moving their fingers slightly. Having used the abacus for so long, they are able to picture it clearly in their mind and feel the position of the beads with their fingers so well that they no longer need the actual piece of equipment. The movement of the fingers is the vestigial trace of the external origins of the cognitive competence. The scaffolding is not so much removed as absorbed.

The abacus actually provides a wealth of examples of ways that external artifacts can be used to provide "word-arounds" or "kluges," that help us to circumvent limitations of what lies within the skin-skull boundary. First there are the beads. As physical objects, these have the attractive property of staying put. Thus, when arranged into a configuration that represents a number, they can overcome limitations in our working memory (the central problem being that so little stays put there). The second major feature is that it allows the operator to replace the set of primitive arithmetic computations with a set of finger movements. Thus adding and subtracting become like positioning one's fingers on the frets of a guitar in order to produce a note – something that quickly becomes second nature, and so can be accomplished with little or no attention. Finally, the "uprights" or bars are used to represent orders of magnitude, making it possible to perform operations like "carrying the 1" in a very simple, tactile way. This provides an easy way to deal with the rather unintuitive character of the notation that we use for numbers, viz. the "base" numbering system. (Think of the way that a bank teller, counting out a large sum in $20 bills, will count out five bills, then make a stack, count out five more bills, then make a second stack, and so on.)

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9   Lev S. Vygotsky, *Thought and Language - Revised Edition*; See also Jerome Bruner, *Acts of Meaning: Four Lectures on Mind and Culture*; and James Wertsch, *Mind as Action*.

In each case, what the inventor of the device has done is take a cognitive operation that we find very demanding and, through clever colonization and manipulation of objects in the environment, replace it with one that we find relatively easy (or that can become quite easy, through habituation). In particular, cognitive operations that must be performed consciously are mapped on to a set of physical motions that can, with practice, be performed unconsciously. Computational outcomes that must be represented linguistically are mapped on to configurations of objects that can be visualized. All of this amplifies our cognitive abilities. But it also means that, when thinking about these abilities, it is important not to focus too narrowly on what happens in our brains. The central lesson of the literature on the "extended mind" is that we should not think of these external artifacts are *merely* aids to cognition, they are often a proper part of the cognitive system. They are, in this respect, more like prosthetics than tools. And, as has often been remarked in the case of the blind person's cane – the tip of which is actually the terminus of the person's sense of touch – many prostheses are so well integrated into how one makes one's way through the world, that we can say we "use" them only in the sense that we can say that we "use" our fingers to type. In fact, we simply type. Similarly, we simply "add the numbers," whether it is in our heads or on paper.

2. The Case of Procrastination

When it comes to tasks like arithmetic, the limitations of our cognitive system are so obvious and solved in such familiar ways that no one seems to notice the remarkable fact that most of us are unable to remember a set of four double-digit numbers for long enough to carry out long multiplication. Thus our dependence upon environmental prosthetics is self-evident. When it comes to practical rationality, on the other hand, many theorists have either ignored or denied the presence of any systematic defects. Rational choice theorists have been front and center in this campaign. Gary Becker's analysis of addiction as a consequence of straightforward, unproblematic utility-maximization represents perhaps the apogee of this tendency.[10] Partly this is due to the noncognitive (or subjectivist) conception of preference that typically informs rational choice theories, which results in practical rationality being held to a lower standard than theoretical rationality. After all, if one puts no constraints at all on the content of preferences, then

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10 Gary Becker and Kevin M. Murphy, "A Theory of Rational Addiction."

it becomes possible to construe any action as rational (in a rather undemanding sense of the term) simply by positing a preference for doing it.[11]

Yet even if one says nothing at all about the content of preferences, there are still defects in our practical reasoning that can be specified at a purely formal level. The most obvious examples involve self-control problems – where individuals, upon due reflection, formulate an intention to perform some action, fail to perform it when the time comes, and subsequently regret this failure. What makes this type of situation noteworthy and problematic is the subsequent regret. It is not merely that the agent fails to follow through on the intention – this could be described simply as a change of mind. It is the fact that the agent subsequently regrets the failure that suggests that she maintains a constant preference, in some sense, for the initially intended action throughout.

An example of this is the everyday phenomenon of procrastination. A quick definition of procrastination would be to say that it occurs when:

1. an agent delays initiation of an action that is associated with some level of disutility, even though
2. the agent knows that doing so increases the level of disutility, at the time that the act must ultimately be performed, and
3. the agent has reason to believe that she will subsequently regret having delayed the action.

This definition is intended to capture the sense in which the procrastinating agent chooses the larger-later evil over the smaller-sooner evil (procrastination is thus the converse of intemperance, in which the agent chooses the smaller-sooner good over the larger-later good). The qualifications are there in order to exclude a couple of cases in which the agent delays initiation of an aversive task, but where this is not genuine procrastination. First, it is not procrastination to put something off when something else comes up that one considers genuinely more important, and which must be attended to first. In that case, the agent has no reason to regret, *ex post*, the choice that he made. Second, even when one has nothing more urgent to do, *merely* delaying a task is not procrastination, unless things can be expected get worse somehow as a result of the delay.

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11 Joseph Heath, *Following the Rules*.

Sometimes we put things off just because we don't feel like doing it now, and from a certain rigorist standpoint, this might be thought to be a failing of some sort. But if the delay has no significant repercussions, it is hard to see how it merits the label of procrastination, since it lacks the quality of perverseness that has made procrastination seem mysterious to so many people. Finally, it should be noted that it is the reasonable *expectation* of future regret that is the important element of procrastination. Whether the agent actually regrets the task later does not matter (e.g. sometimes unpleasant tasks actually do just go away, when they are deferred for long enough, even though we have no reasonable expectation that they will).

A simple example of procrastination would be leaving the dishes to stack up in the sink, even though it is easier to clean them right away, before the muck on them hardens. The behavior induces regret because, when the individual finally does settle down and perform the task, he will be aware that it is now more unpleasant or difficult than it would have been, had he done it right away. A more serious example would be someone who puts off having a colonoscopy, and therefore may miss having a colon cancer diagnosed at an early stage. In this case, the colonoscopy does not become any more unpleasant as a result of the delay, but the individual's anticipated health outcome becomes worse (and thus the delay "makes things worse").

If "utility" is defined in terms of payoffs – with respect to how much satisfaction or dissatisfaction a sequence of events ultimately generates for the individual – procrastination *foreseeably* fails to maximize the individual's achieved utility level (i.e. as seen from an ex post perspective). It is because the delay in some sense makes things worse that the agent can expect to subsequently regret the delay, and therefore can be said to suffer a failure of self-control. However, one of most noteworthy features of procrastination is that the agent does not suffer from any loss of intentional control throughout this period. Thus the individual who fails to do the dishes promptly is nevertheless *choosing* not to do the dishes at the time at which he forgoes the opportunity to do them. He is not the same as someone who gets drunk, or angry, or into some other state in which executive function is impaired, and does something that he subsequently regrets. People often procrastinate *under that description* (i.e. if you ask them what they haven't done something yet, they'll say "I'm procrastinating.") This is one of the reasons why a hyperbolic discounting model provides the most perspicuous representation of the phenomenon. It offers a rationalizing account of procrastination, yet one that is still able to account for the preference

reversal and regret that characterizes such failures of self-control.

The hyperbolic discounting model has two central components. The first claim is that agents not only have preferences with respect to various events that can occur, they also have a time-preference, which (all things being equal) leads them to experience *delay* as aversive, when it intervenes between the present and a positively valued event, and as attractive, when it intervenes between the present and a negatively valued event.[12] The common way of expressing this is to say that individuals *discount* future satisfaction. The second component is the claim that there is a "warp" in this aversion toward delay, such that agents find a delay of a given length less aversive, the further removed it is from the present, above and beyond what can be attributed to the mere fact that the experience of this delay is delayed.[13] This is typically expressed by saying that individuals discount future satisfaction in a way that is highly exaggerated in the near term – hence "hyperbolic" discounting.

The most important feature of hyperbolic discounting is that it leads individuals to rank near-term and long-term events very differently. Hyperbolic discounters have a preference ordering over distant events that is almost exactly the same as the atemporal ranking that could be derived from the "payoff" value of these events, but their ranking of more proximate events frequently deviates quite significantly from a strictly payoff-based ranking. As a result, the passage of time can lead individuals to change their preference ordering, in such a way as to make "smaller-sooner" payoffs more attractive than "larger-later" ones. This subsequently induces regret, at the time at which the "larger-later" reward could have been obtained. "If only I had waited," the agent will say. When the payoffs are negative, the same phenomenon occurs in reverse. Long before the dishes are dirty, the agent may see that it makes sense to wash them up right away, thereby minimizing the negative payoff. Yet she waits, only to regret the decision later, once the disutility of the payoff has grown. "If only I had done this sooner," she will say.

There are two things that should be noted about this in passing. First, hyperbolic discounting is introduced here as a *model* that can be used to represent the dynamics of

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12   The most important exception is "dread," which occurs when the delay of an aversive event is also experienced aversively. This can lead people to want to "get it over with" sooner rather than later – a phenomenon that is capable of generating the opposite of procrastination. Consider a patient who opts to have a painful dental procedure done right away, by a less experienced practitioner, rather than later, by a more experienced one.

13   George Ainslie, *Breakdown of Will.*

procrastination, not as an *explanation* for why individuals procrastinate. Indeed, there are a variety of theories that seek to explain the psychological underpinnings of hyperbolic discounting, in particular, why there is the "warp" in our attitude toward delay.[14] For our purposes, it does not matter *why* there is a warp, only *that* there is this warp.

The second thing to notice about the hyperbolic discounting model is that it provides an account of procrastination and other forms of giving in to temptation without invoking what philosophers call "strict *akrasia*," or intentional counterpreferential choice.[15] Although there is a whiff of irrationality about the dynamic inconsistency in the agent's preferences, the fact remains that, at the time at which she acts, she is acting in accordance with her occurent subjective preferences – not contrary to them. Formally speaking, there is no logical inconsistency in changing one's preferences over time, or in changing them back. Indeed, there are occasions on which we might quite easily sympathize with the agent's "intemperate" self, the one who wants to change the decision, even knowing that he will subsequently regret having done so.[16] Given how wide open our eyes typically are about what we are doing when we procrastinate, it seems unlikely that the most effective strategies for reducing procrastination will focus on simply understanding how counterproductive it is. Rather, we are likely to be helped most by kluges, workarounds, and scaffolding.[17]

3. Self-Control Strategies

In some cases, avoiding procrastination is a matter of just buckling down and doing it, a straightforward exercise of willpower. An agent who opts for such a strategy simply resolves to

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14 The latter may involve a failure of affective forecasting. Right now, a three-day delay doesn't seem like a big deal, the delay will be a big deal. Could have to do with changes in terms used to describe, or "hot" psychological states.

15 Alfred Mele, *Irrationality: An Essay on Akrasia, Self-Deception and Self-Control*.

16 Jay Chirstensen-Szalanski, "Discount Functions and the Measurement of Patients' Values: Women's Decisions during Childbirth," a study of the behavior of women who had chosen, prior to labor, to refrain from using any pain control. He found that a majority reversed this decision after active labor pains had begun. He also found, however, that almost all of those who reversed their position drifted back to their original view – that pain control was undesirable – within 3 months postpartum. Thus their "standing" preference was for childbirth without pain control. It was only when they were actually experiencing the pain that they were fully appreciated the merits of pain control. In this case, one might easily identify with the preference at the moment of decision, and suspect that there is an element of self-deception in the "standing" preference.

17 For a related discussion, see Heath, *Following the Rules*, 228-234.

perform a certain action and holds steadfastly to that intention, resisting whatever inclinations may arise to revise his or her plans (along the lines of a "New Year's resolution.") We often describe people who are able to do this as having a lot of "self-discipline." There is no doubt that individual willpower, whatever it turns out to be, is a good thing to have in the struggle to avoid making unpleasant tasks worse by delaying them. The more complex and individualized societies become, the more individuals will need self-discipline if they are not to suffer disadvantages in both competitive and non-competitive contexts.

But there are reasons to doubt that "simply buckling down" will be enough to solve many pathologies of the will – or, indeed, that it ever has been enough. To begin with, there are many unanswered empirical questions about how such self-discipline is possible and what the limits of it are. Several recent studies suggest that although willpower is like a muscle, and can be trained, it can also become exhausted. In experimental studies, Roy Baumeister and colleagues have shown that (human) subjects who resisted a temptation for a period of time were less able than control group members to resist a temptation that followed closely thereafter.[18] If the demands of individuals for processing decisions and resisting various temptations is on the rise in increasingly complex societies, these individual capacities might easily become overtaxed – if pure willpower were all that people could rely on. It is, however, unclear to what extent the average person actually relies on individual self-discipline to avoid or to limit procrastination. Our suspicion is that its role is greatly exaggerated. Much of the time, what looks like sheer willpower is the result of more-or-less well-orchestrated attempts by individuals to arrange their lives in such a way as to *economize* on willpower, by avoiding situations that call for its exercise. We refer to this as *distributed willpower*, since it involves individuals creating more than one locus of self-control.[19]

Self-control strategies can usefully be thought of under four general categories, each of which involves movement away from the purely psychological toward the environmental.

1. Direct psychological strategies. There are many effective strategies that involve shifts in one's cognitive approach to an aversive task. These are ways of re-conceptualizing or re-framing tasks

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18 M. Muraven and R. Baumeister, "Self-Regulation and Depletion of Limited Resources: Does Self-Control Resemble a Muscle?"

19 The parallel here is with "distributed cognition" within cognitive science discussions. See for example E. Hutchins, *Cognition in the Wild*.

so as to inhibit negative tendencies, or more often, to help individuals tap into motivational resources that would be otherwise uninvolved. The system of "mental accounts" that many people use to control household spending (e.g. distinguishing "retirement savings" from "rent money" and "spending money," etc.), is a well-known example of this.[20] These sorts of psychological techniques differ from "pure willpower" in that the individual is not simply forcing herself to do something, but is somehow modifying the construal of the task in such a way as to decrease the level of "forcing" that is required. We refer to such techniques as *strategic reframing*.

A general approach to the analysis of such strategies can be found in "Temporal Motivation Theory" (which is, essentially, an approach to procrastination derived from the hyperbolic discounting model).[21] This model identifies three items as central to the dynamic of preference change, and hence procrastination: expected utility, delay, and sensitivity to delay. Thus one way in which individuals can avoid their own tendency to procrastinate is to manipulate one (or more) of these three variables.

To begin with, take the (dis)utility associated with boredom. People are most likely to procrastinate before performing boring tasks (and people who are easily bored are more likely to procrastinate).[22] The natural explanation is that boredom increases the aversiveness of a task (thus diminishing expected utility). One way to avoid procrastination is therefore to try to find something interesting about the task, or to embed it within some larger construct that makes it more appealing (e.g. turning it into a game, or timing one's performance and then trying to beat that time). One might think of this as the Mary Poppins strategy: "For every job that must be done, there is an element of fun. Find the fun and, snap, the job's a game." In some cases, a more redescription of a task can be effective in enhancing motivation, since preferences over actions have been shown to be sensitive to the language in which the action (or associated outcome) is described.[23]

Similarly, to overcome the tendency to put off initiating a task with a very delayed pay-off point, one can set a sequence of intermediate goals. This strategic re-framing involves the tried-

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20 R.H. Thaler, "Mental accounting and consumer choice"; R.H. Thaler, "Saving, fungibility and mental accounts."

21 Steel, "The Nature of Procrastination."

22 Steel, "The Nature of Procrastination."

23 Yaacov Trope and Nira Libennan, "Temporal Construal and Time-Dependent Changes in Preference," *Journal of Personality and Social Psychology*, 79 (2000): 876-889

and-true time-management strategy of breaking down an intimidating task into its component parts, each of which is much more doable. By shifting one's focus from the ultimate goal to specific intermediate steps, one not only turns an intimidating mountain into a series of doable molehills, one also reduces the delay between effort and reward (whether that reward be an intermediate treat or simply the confidence-building sense of accomplishment). So, while the reward of having written a book may be so far off as to have little motivational pull, the satisfaction associated with having written a chapter, or better yet, having met one's target of three pages per day, is likely to be much more effective. Empirical support for this reframing strategy is found in research on "implementation intentions" by Gollwitzer and colleagues. In one study, it was shown that "difficult goal intentions were completed about 3 times more often when participants had furnished them with implementation intentions."[24] For related reasons, techniques involving visualizing the steps to be taken tends to create the impression that the results are even more proximate.

Of course, what would dramatically reduce procrastination would be reductions in our sensitivity to delay. If our motivation were indifferent to delay, we would not have to play these tricks with ourselves. This is where fundamental differences in personality can play a significant role, and it is not clear that we can or even ought to want to change our sensitivity to delay, since it reflects deep-seated meta-preferences regarding rates of discounting. Nonetheless, if our sensitivity to delay were unchangeable, it would be difficult to explain how children learn to be patient. Indeed, one natural model for thinking about patience is as a reduced sensitivity to delay. And thus, insofar as steps can be taken to reduce one's impatience generally, it is likely to reduce one's tendency to procrastinate.[25]

2. Self-management strategies. The reframing techniques described above are still relatively direct, in the sense that, when successful, they actually fix the problem, eliminating the underlying tendency to procrastinate. A person who persuades himself that cleaning up the dishes is fun is no longer tempted to procrastinate, because he no longer finds the task aversive. He may have

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24 P.M. Gollwitzer and V. Brandstätter, "Implementation intentions and effective goal pursuit."

25 Particularly relevant in this context is research on the relationship between personality traits and task aversion. See, for example, Blunt and Pychyl, "Task aversiveness and procrastination" and Wendelien Van Eerde, "Procrastination: Self-regulation in Initiating Aversive Goals."

engaged in all sorts of artful self-manipulation in order to convince himself that it is fun, yet the end result is an actual elimination of the inclination to procrastinate.

Apart from these direct strategies, there are also an enormous number of psychological "kluges" that people employ. Rather than trying to resolve or eliminate the underlying problem, here the individual simply tries to work around it. In many cases, this involves taking some other defect in our nature and using it to counteract the defect that leads us into temporary preference reversals. For example, a major limitation of the re-framing strategies just discussed is that they require quite a bit of active purposefulness, such as maintaining conscious attention, and this is often precisely what individuals are lacking in cases of procrastination. As a result, individuals may find it useful to develop automatic processes that are set up in advance and can channel their behavior in cases where their attention lapses. The classic example of this is good habits. In a sense, if you have good habits, you don't need willpower.

Closely related to this is the strategy of "psychological bundling" of tasks. The idea here is to take something that you don't particularly like doing and to combine it with something that you do like. "Singing while you work" is perhaps the best example of this, although unfortunately it's a technique that only works well with manual labor. Another example would be keeping track of how much money you're making, as you perform some employment-related task. (This is particularly effective when working on piece rates.) Once the two activities become habitually conjoined, then the psychological bundling may diminish the aversiveness of the package. And since a daily routine can itself become a source of gratification, building the performance of certain chores into a routine can amount to a form of psychological bundling.

Certain forms of psychological bundling may also shade over into self-reward, in which the individual consciously withholds some gratification until after a task is complete. (Smokers do this habitually, by timing their cigarette breaks to coincide with particular accomplishments. Loss of this self-control mechanism is in fact one of the reasons that quitting smoking is so difficult.) There is of course something both artificial and psychologically mysterious about this strategy. If I lack the willpower to complete a task, why don't I also lack the willpower to deny myself the gratification? As Hobbes claimed, "he that can bind, can release, and so he that is bound to himself only, is not bound."[26] The fact that people are capable of self-binding may be due to the fact that

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26 Thomas Hobbes, *Leviathan*, 111.

we are usually capable of different levels of self-control in different areas of life. A person who is rather miserly, for instance, may find it easy to refrain from spending money. He might therefore coax himself into performing an unpleasant task by promising to buy himself something he has long wanted, once the task is complete. In this case, the willpower he is able to exercise in one domain is "leveraged," through the self-reward strategy, into self-control in another.[27]

Another example of self-management is what is known as "structured procrastination."[28] The basic idea here is to use one's own capacity for self-deception as a way of combating procrastination. Most people, when they procrastinate, do not chose to do nothing. A person who is putting off doing the dishes, for instance, typically will not just stare at the wall, but will do something else, like watch television. John Perry has observed, however, that many people, rather than performing the highly aversive task that is being avoided, will perform some other *mildly* aversive, perhaps even marginally useful, task. Thus a person who hates a particular household chore may put it off by doing some other chore, one that is somewhat less useful, but at the same time less unpleasant (e.g. light dusting). (In many cases this is undoubtedly connected to the fact that the temporary preference reversal associated with procrastination is rationalized.[29] This rationalization is easier to sustain if one is doing something mildly unpleasant, as opposed to straightforwardly pleasurable.) Perry explains the strategy as follows:

> Procrastinators seldom do absolutely nothing; they do marginally useful things, like gardening or sharpening pencils or making a diagram of how they will reorganize their files when they get around to it. Why does the procrastinator do these things? Because they are a way of not doing something more important. If all the procrastinator had left to do was to sharpen some pencils, no force on earth could get him do it. However, the procrastinator can be motivated to do difficult, timely and important tasks, as long as these tasks are a way of not doing something more important. Structured procrastination means shaping the structure of the tasks one

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27 Chrisoula paper, this volume. See also Ainslie, *Breakdown of Will.*

28 John Perry, "Structured Procrastination."

29 Lennart Sjoberg and Tommy Johnson, "Trying to Give Up Smoking: A Study of Volitional Breakdowns."

has to do in a way that exploits this fact.[30]

Thus a person who has trouble washing the dishes might persuade himself that he really ought to clean the oven as well, and then put off doing this by washing the dishes.

It is worth noting that these approaches all involve taking a slightly objectivating attitude toward the self, of dissociating oneself from oneself as an agent and shifting to a perspective in which one is more of a passive observer of one's doings. George Ainslie's model of self-control as a matter of mobilizing various forces within the psyche to fight it out among themselves fits this same pattern.[31] His general thought is that individuals cannot direct or control their inclinations and motives, and so must strive to line them up in such a way that the ones that ought to win are more likely to win (like setting up a "bot battle" on terrain that is likely to give some of the robots an advantage). But, however reasonable Ainslie's opposition to the notion of a homunculus directing our actions, the unavoidable impression that the agent is entirely sidelined in the process of generating actions leaves it somewhat mysterious what it means that agents care about what they end up doing.

3. Environmental strategies. Many of the examples given so far involve a certain degree of cleverness and manipulation on the part of the individual. In part, this is a reflection of the relative poverty of the psychological resources that are available to us, when it comes to dealing with self-control problems. When we turn to environmental strategies, by contrast, the field of possibilities opens up considerably. Indeed, the use of environmental manipulation by individuals as a technique for enhancing self-control is absolutely routine and ubiquitous – indeed, it is so commonplace that we are often in danger of overlooking it completely. (In the same way, when it comes to overcoming weaknesses in our memory, the mnemonist's bag of tricks seems quite exotic and recherché, when compared to the simple expedient of writing things down.)

Looking inside someone's office, their kitchen pantry, their bedroom, or even on their computer 'desktop', what one sees is an entire structure of cognitive and volitional scaffolding, a "system" that this person uses in order to accomplish (with varying degrees of success) routine

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30 Perry, "Structured Procrastination."

31 Ainslie, *Breakdown of Will*, esp. ch. 4.

tasks. Many aspects of the way this environment is organized are intended to facilitate self-control. People who are good at environmental manipulation try to organize their affairs in such as way as to make certain activities easier and others harder. We can distinguish three general types of environmental kluges: *triggers*, *chutes*, and *ladders*. Each of these represent features of the environment that either assist or discourage one from initiating and persevering with an intended task. They may have emerged by more or less adaptive happenstance, or they may have been intentionally designed, whether by the individual or someone else.

Triggers are environmental cues that, when appropriately placed, set automatic processes in motion (or bring them to a stop). Suppose you intend to go running every morning *first thing*, but once you've poured yourself a cup of coffee and opened up the morning paper, the idea of a run seems like an unpleasant interruption. Putting your running shoes in front of the coffee maker can trigger the intended routine of going for a run, before other routines kick in. Triggers can also work in tandem with other strategies, for example, by periodically reminding one of various promised rewards, thereby activating those motivational resources. In addition, triggers can function as warnings, alerting one to impending temptations or calling for a quick check of whether one is on track (such as nag-screens that pop up on the computer every time one switches to one's browser).[32]

Many environmental features help with task completion by making certain desirable courses of action particularly smooth and effortless. These "chutes" are setups that make it easier to slide into doing something. To take a variation on the early-morning run case: by laying out, the evening before, everything one needs, the threshold to "just doing it" is lowered. You step out of bed, the chute takes over, and the next thing you know you are running out the door. Another example comes from the literal design of one's environment. The architect Gerrit Rietveld's premier 1924 "Schröder Huis" includes, next to the entrance, a fold-down chair and desk with storage for stationary, pens, envelopes, and postage, so that Frau Schröder could answer mail immediately upon opening it, without even leaving the entryway.

Given the importance of individual sensitivity to delay, simply manipulating the amount of time it will take to access various options is an excellent way of "offloading" self-control tasks.

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32 See, for example, Merlin Mann's "Right now, what are you doing?" nag-screen at
    http://www.43folders.com/2008/09/01/what-are-you-doing.

For example, many people buy prewashed, precut fruit and vegetables at a very steep premium, not because they value their own time that highly, but because they find themselves much more likely to eat it once it is ready to go. Peeling an orange or up cutting a cantaloupe does not take that long, but healthy snacks like this are often in direct competition with unhealthy snacks – and since junk food is always ready to go, right away, the difference that a one-minute delay can make is enormous.

Yet lowering the threshold to initiating intended actions pales in comparative importance to *raising* the threshold to undertaking wasteful actions, especially when it comes to procrastination. We need thresholds, hurdles, and steep ladders to keep us on the right track. By structuring one's environment effectively, one can reduce the distractions and temptations behind much procrastination. Again, it is often sufficient just to introduce a delay in the initiation of the time-waster. If email, instant-messaging, minesweeper or web-surfing are sources of procrastination, then simply removing bookmarks and other shortcuts or regularly shutting down the programs may provide enough of a threshold to keep one from "just checking" too often. A more extreme option is to install a product called "Software Time Lock," which allows the user to "set blocks of time during which you cannot access the Web, set blocks of time during which specific programs cannot be used, set blocks of time during which you cannot use the computer at all, set limits on how long you can access the Web each day" etc.[33]

Given that distractibility and impulsiveness are strongly correlated with procrastination, this sort of environmental management is crucially important. Even something as simple as closing the office door, or working in an environment without an internet connection, telephone, or cell phone reception, can dramatically improve task performance.

4. Social strategies. Finally, the most obvious way to exercise self-control in the event of an anticipated failure of willpower is simply to preauthorize some other person either to act on your behalf or to impose control upon you. The *locus classicus* for this strategy is Ulysses ordering his sailors to tie him to the mast and then to ignore his subsequent instructions. There are, however, a multitude of far more subtle strategies that we use, in order to offload (or perhaps one should say outsource) one's self-control onto other people.

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33 See http://leithauserresearch.com/software_time_lock.html

When it comes to procrastination, the most obvious example of this is the social institution of deadlines. By accepting a deadline, the individual essentially makes a commitment to another person that a particular task will be accomplished by a certain time. It is often not the case that this deadline coincides with any objective requirement, i.e. nothing bad actually happens if the deadline is missed, other than that the deadline is missed. And yet deadlines are often motivationally quite effective, even when everyone is aware of their artificiality. A closely related strategy is the time-honored techniques of overcommitment. If Parkinson's Law is correct ("work expands to fill the time available for its completion"), then the best way to ensure that one is working at a reasonably high intensity level is to take on too much. This makes it easier to meet deadlines, in part because it deprives one of certain rationalizations that are often used to excuse procrastination. "I'll get to it tomorrow" becomes far less persuasive, if the workload is such that there is literally no slack in the schedule (so that leaving it until tomorrow is as good as not doing it at all).

Team-work is another closely related strategy. Like deadlines, working on a task jointly with other people brings a variety of social motives (such as the individual's norm-conformative disposition, desire to avoid disapproval, unwillingness to "let down the side," concern over social status) into alignment with his or her instrumental work objectives. Many people find that they can only bring themselves to exercise intensively by playing team sports. In the same way, many people work far more effectively in groups (counterintuitively, given the free-rider incentives that group work often creates). Many of the direct psychological strategies outlined above are also far more effective, and much easier to implement, when carried out in a social context. "Making a game of it" can require considerable imagination, when carried out in solitude. But in a social context, it is always possible to make a game out of any task, often quite literally. The most obvious way is by introducing a competitive structure into group relations, for example, by giving a prize to the person who performs best (think of the way companies give out bonuses, or even "employee of the week" awards). In a social context, it is possible to change the incentives governing a particular task in a way that is often not possible at a purely individual level. Relatively feeble "self-rewards" can be replaced by actual rewards.

People in long-term intimate relationships often develop a very advanced division of labor between themselves. This extends to both cognitive tasks, such as remembering names, but also to

practical, volitional ones. One can often see a division of self-control tasks in the way that household labor is divided up (e.g. the person least likely to buy junk food is the one who does the grocery shopping, the one who is most likely to pay the bills on time is the one who looks after the finances, etc.) More informally, couples may employ the "license to nag," whereby they essentially authorize one another to complain, criticize and even punish them for failures of willpower. They may also begin to rely upon the other person's complaints as a cue for initiating action.

Perhaps the most subtle mechanism of self-control is selective association. Imitation and conformity provide very powerful motives. In particular, we rely upon imitation to establish what Ap Dijksterhuis and John Bargh refer to as "default social behavior."[34] Thus one way to avoid self-control failures of a particular sort is to avoid the company of those who suffer from such failures. Being around prompt, hardworking, high-achievers is one of the best ways of becoming prompt and hardworking as well. Associating with slackers is a good way of becoming a slacker.

A quick survey of this analysis is enough to reveal that the available set of strategies becomes richer and more numerous as one proceeds down the list. There is not all that much we can do, using our "onboard" resources, when it comes to controlling procrastination. When one moves into the domain of the environment, on the other hand, especially the social environment, the set of available strategies becomes less restricted. The latter seems to be limited primarily by human imagination, not any inherent limitations of the medium.

The importance of these environmental strategies can be seen in the phenomenon of "college procrastination" – the fact that college students, particularly during first and second year, experience much higher levels of "problem procrastination" than the general public. What is particularly interesting about this phenomenon is that it has little predictive significance, when it comes to determining work habits in other contexts.[35] From an internalist perspective this is

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34 Ap Dijksterhuis and John A. Bargh, "The Perceptual-Behavior Expressway: Automatic Effects of Social Perception and Social Behavior." See also John A. Bargh and Tanya L. Chartrand, "The Unbearable Automaticity of Being."

35 Simon M. Moon and Alfred J. Illingworth, ". "Exploring the Dynamic Nature of Procrastination: A Latent Growth Curve Analysis of Academic Procrastination," 307. For a sample of the voluminous literature on college students and procrastination, see Tracy Janssen and John S. Carton, "The Effects of Locus of Control and Task Difficulty on Procrastination;" M.M. Kachgal, L.S. Hansen, and K.J. Nutter, "Academic Procrastination Prevention/Intervention: Strategies and Recommendations;" T.A. Pychyl, J.M. Lee. R. Thibodeau, and A. Blunt,

perhaps mysterious, but when seen from the perspective of environmental scaffolding it is entirely unsurprising. College students are given a fairly high degree of autonomy, when it comes to determining a plan of work for themselves, yet they are deprived of all the scaffolding that they have used, in the past, to offload motivational resources. Often they are living away from home for the first time, and so are missing whatever "system" they had developed for the timely completion of tasks. (For example, merely studying in the same location has been shown to decrease procrastination among college students.[36] This is a habit that many high-school students would have living at home, but which could easily be lost in the transition to college.) Furthermore, they are no longer under direct parental supervision, and so are cut free from what has typically been their most important social self-control mechanism.

4. Moving Beyond Mentalistic, Individualistic, and Voluntaristic Assumptions about Rational Action

One could view the foregoing discussion of "externalist" strategies simply as elements in a diverse toolbox for reducing procrastination. But we believe that they have wider implications, and it is with some speculative remarks about these implications that we shall conclude. There is an important two-fold shift that occurs when one starts to think about the use of social and environmental support strategies as the norm rather than the exception. i.e. when one begins to conceive of the will as "extended." First of all, seeing self-control in terms of support structures forces one to move away from a number of mentalistic, individualistic, and voluntaristic assumptions about rational human action. A quick overview of these strategies, their presuppositions, and the recent empirical literature suggests that if we are to fully appreciate the pervasiveness and usefulness of these strategies, we need to rethink these underlying

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"Five Days of Emotion: An Experience Sampling Study of Undergraduate Student Procrastination;" T.A. Pychyl, R.W. Morin, and B.R. Salmon,"Procrastination and the Planning Fallacy: An Examination of the Study Habits of University Students;" Albert Ellis and William J. Knaus, *Overcoming Procrastination: Or How to Think and Act Rationally in Spite of Life's Inevitable Hassles*; Joseph R. Ferrari, Sabrina M. Keane, Raymond N. Wolfe and Brett L. Beck, "The Antecedents and Consequences of Academic Excuse-Making: Examining Individual Differences in Procrastination;" Laura J. Solomon and Esther D. Rothblum, "Academic Procrastination: frequency and cognitive-behavioral correlates;" J.R. Ferrari and S.J. Scher, "Toward an Understanding of academic and nonacademic tasks procrastinated by students;" Esther D. Rothblum, Laura J. Solomon and Janice Murakami, "Affective, cognitive and behavioral differences between high and low procrastinators."

36 H.A. Jr. Ziesat, T.L. Rosenthal and G.M. White, "Behavioral Self-Control in Treating Procrastination of Studying."

presuppositions. Second, once it becomes clear the extent to which procrastination – along with its high personal and social costs – is the result of an absence of scaffolding, then the apparent decline in social and environmental scaffolding becomes an issue of public policy. For if life-chances are increasingly being tied to one's ability to avoid procrastination, or to exhibit self-control more generally, then access to scaffolding becomes a crucial determinant of welfare. (We take up this point the final section.)

Consider first the implications of the prevalence of distributed willpower for our understanding of rational human agency. On what one might call the "standard model," what is needed to avoid irrationality is largely understood in mentalistic, individualistic, and voluntaristic terms. Being rational, on this view, is a matter of correct thinking on the part of individuals, along with the ability to exert one's will decisively. But looking at how we are able to avoid procrastination suggests that rationality is, at least on that domain, achieved rather differently.

Traditional time management advice has been mentalistic in assuming that solutions will come from individuals thinking more rationally about how best to achieve their goals. The focus is on cognitive accomplishments that are within the intentional control of the mind; they are, indeed, operations of the mind that are thought to flow directly into action. Much of the self-help literature also focuses on internal psychological factors, such as "fear of failure," that may discourage people from working as effectively as they might (e.g. one popular book claims that "procrastination may be protecting a fragile sense of self-worth that is shaken by threats of judgment, control, closeness or distance."[37]) Rather than restructuring the temporal dynamics of choice, or changing their external incentives, individuals are encouraged simply to focus more clearly on the goals that they hope to attain, and the negative consequences of delay.[38] Consider, for instance, the following list of "tips" for overcoming procrastination:

Figure out what has the biggest payoff and do that first....
Be your own biggest fan.
Start sooner.
Stop busywork.

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37 Jane B. Burka and Lenora M. Yuen, *Procrastination: Why You Do It, What To Do About It*, 83.

38 Burka and Yuen, *Procrastination*, 119.

Set aside hopelessness and other forms of negative thinking.

Forgive previous mistakes and expect new ones.[39]

While this author does eventually get around to making environmental recommendations, these typically occur last, after a lengthy set of purely psychological recommendations. There is no "offloading" here, nothing that reduces the motivational burden on the individual. These are all either direct psychological or else self-management strategies. As we have emphasized throughout, however – and as the empirical data suggest – avoiding procrastination is typically not a matter of these forms of cognizing.

This idea is beginning to be reflected in some approaches to time management. It is highly instructive, for example, to consider that the approach that has been gained perhaps the most significantly following among knowledge workers and other professionals – David Allen's *Getting Things Done*[40] – is resolutely "externalist" in its orientation. At the core of the system of personal organization and time management is the insistence that absolutely everything that is not immediately being worked upon be offloaded into an external physical system that one trusts, and pre-processed into "next action" chunks that are easily initiated in response to contextual cues. Getting things done becomes then a decidedly non-mentalistic matter of turning amorphous responsibilities into an unintimidating pile of "widgets to be cranked."

Even approaches to avoiding procrastination that understand the importance of material scaffolding still tend to focus rather individualistically on personal tools and habits. While these are important, we have seen how many of the supports that enable us to avoid procrastination are part of the social and built environment. This is clearest in the breach. As traditional offices, with their doors for shutting out distractions, have been replaced with open offices of cubicles, people have come to realize how much harder they have to work to keep on-task.[41] These and other features of the built environment have changed in the past few decades, in a way that has thrown individuals back, to an ever-increasing degree, upon their "onboard" resources. Much the same can

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39 Lynn Lively, *The Procrastinator's Guide to Success*, 20-27.

40 David Allen, *Getting Things Done: The Art of Stress-Free Productivity.* For a fascinating analysis of the parallels between Allen's approach and empirical psychology, see F. Heylighen and C. Vidal, "Getting Things Done: The Science Behind Stress-Free Productivity."

41 Steel, p. 82.

be said for the social environment, where freelancers and telecommuters find that working out of the home office leaves them without the supportive peer pressure of a buzzing office. What becomes clear in such cases is that "being self-disciplined" is a *contextual property* – not simply a personality trait but rather of feature of persons as they are in particular contexts, with the requisite scaffolding.[42] The further implication of this is that some of the most important resources for overcoming procrastination are not portable, individual assets but shared goods – and goods that are being dismantled even as individual competition becomes more cutthroat (as we discuss in the next section).

A related but perhaps more controversial point can be made about the assumption of voluntarism, that is, the view that what is needed for avoiding forms of counterproductive behavior is a matter of our setting up systems, adopting practices, arranging our environment, and so on. The reality is that many of the most effective support structures – especially the social ones – are not built by us but built for us, part of an institutional and material heritage. And they are much more difficult to bring about intentionally than to dismantle. When a traditional institution such as the relatively early "last call" for drinks at British pubs is abolished, it is of course possible for people to institute, perhaps with friends, various strategies for avoiding procrastinating about getting to bed on time. But such arrangements are typically effortful and fragile, relative to taken-for-granted structures. Thus extended pub hours are a decidedly mixed blessing. There is, we acknowledge, a danger here of this point being seen as licensing paternalistic, authoritarian or traditionalist approaches. There are complex challenges here regarding how to balance a commitment to autonomy and freedom with the recognition that there are often real benefits of volitional supports being unchosen. And these complexities come into particularly sharp focus as one looks at the effects of their dismantling on those who have the fewest resources for handling the new individual responsibilities. This brings us to some concluding remarks about the political and public policy implications of this more externalist understanding of how to counter irrational human tendencies.

5. Access to Scaffolding as an Issue of Public Policy

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42 Incidentally, this contextualist understanding of self-discipline provides a way of accommodating some of the cases that have fueled recent philosophical skepticism about personality traits (see, for example, John Doris, *Lack of Character: Personality and Moral Behavior*) without denying the relevance of personality altogether.

Procrastination is clearly a fascinating philosophical and psychological puzzle. But it is also quite bad for people. Chronic procrastination, in particular, is a behavioral pattern that has real and often devastating consequences. This is not just about last-minute Christmas shopping, or birthday cards getting sent late. By putting things off, people lose their jobs, their insurance, and their homes; their health suffers, and they tend to be "more miserable in the long term."[43] In light of the externalist account of procrastination that we have been developing here, this turns out to have potentially important political implications – once three further plausible assumptions are taken into account.

First, there are strong indications that certain social and economic developments in modern societies place increasingly high demands on the capacities that comprise our ability to avoid procrastination. With the explosive growth in communication technologies and marketing strategies, there are more distractions to be resisted (emails from friends, cell-phones going off in the middle of trying to get something done, social networks and instant messaging, a constant flow of advertisements, etc.). Furthermore, distractions that pop up tend to pop up much faster, or more immediately. And even as the growing complexity of social organizations heightens demands for tightly coordinated activities, the flexibilization and decentralization of organizational structures often leaves individuals to manage the scheduling tasks on their own.[44]

Second, as we noted earlier, one of the striking features of individualizing and liberalizing trends in many societies is that they involve the dismantling or abandonment of traditional forms of *unchosen* scaffolding. In some ways, this is an extremely welcome development. As the social controls of traditional village life have given way for privacy rights and anonymity of modern city life, we are much more free to do as we please. But it also means that we can rely less on the motivating power of social control to keep us on track. To take just one example, TV stations used to end their broadcasts at around midnight, bars and restaurants would close, subways and buses would stop running – the clear message being sent was: "time to go to bed." These institutional arrangements also made it much *easier* to go to bed, since there was little else to do after a certain hour. Now individuals must decide, on their own, when to go to bed. It would not be surprising to discover that self-control issues were at the heart of a lot of the sleep-deprivation that has become

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43   For an overview of the costs, see Steel, "The Nature of Procrastination," 65.

44   This is convincingly portrayed by Ulrich Beck in *Risk Society: Towards a New Modernity*.

a source of complaint in our society.

Third, it is also important to keep in mind the rather straightforward point that, given differences in social position, individual ability and personality, the effects of both heightened demands and dismantled scaffolding will not be the same for all. Those most vulnerable to suffer from these developments are those who are particularly bad at keeping procrastination in check. Insofar as this is a matter of a quasi-*natural* distribution of personality types or ability (or whatever else turns out to be a crucial determinant of being able to limit procrastination), this already introduces complex and contentious questions about whether such vulnerabilities can count, in some extended sense, as a disability. But to the extent that any significant patterns of variation in capacities for resisting procrastination correlate with socio-economic status or various sorts of group membership, the resulting inequality potentially becomes a matter of institutional injustice. For example, if slackening closing times of pubs or repayment deadlines for loans led to increases in especially problematic procrastination, and particularly for persons with low levels of formal education, then that would raise serious issues of fairness. The liberty of some would be purchased at the expense of achieved welfare for others.

The upshot of all this is that procrastination becomes, not just an issue of individual psychology, but also an issue of social justice. If people's life-chances are significantly shaped by their access to scaffolding, and if many forms of scaffolding are being dismantled or rendered inadequate as the result of social processes that could be addressed (to some extent, at least) by public policy, then the negative consequences of procrastination are not just the result of people failing to cognize appropriately as individuals; these bad outcomes are partly the result of decisions and dynamics over which individuals have little control.

For example, economist David Laibson has argued that one of the major factors driving the collapse of the savings rate in the United States has been financial innovation in the banking sector.[45] Not only has access to credit become much easier, but access to *one's own money* has increased quite significantly. The difference between savings and checking accounts has become purely nominal – banks no longer have to be given advance notice of an intention to withdraw money from savings. The introduction of ATMs has meant that everyone has access to their money at all hours (and so withdrawing a fixed amount at the beginning of the week can no longer

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45 David Laibson, "Golden Eggs and Hyperbolic Discounting."

be used as a self-control mechanism). Mortgage loans are being replaced by equity-backed "lines of credit," which homeowners can withdraw from at any time. While each of these innovations enhances efficiency for some, it also has the unintended side-effect of removing part of the institutional scaffolding that many individuals used to rely upon in order to save. Putting money in a bank was at one time a way of making it harder to spend. Consumers with self-control problems must now resort to strategies that can be carried out individualistically (such as freezing one's credit card in a block of ice, in order to impose a mandatory wait-time before an "impulse buy" is made).

Does this mean that "society" should be responsible for people not paying their taxes on time, or putting off a visit to the doctor? Not quite. But to the extent that public policy decisions affect the availability of and access to the relevant scaffolding, and that these decisions can potentially affect individual life chances, a collective concern with individual welfare or the reduction of vulnerability or inequalities entails a concern for procrastination, along with an obligation to avoid dismantling the scaffolding that enables people, standardly, to keep procrastination in check. Once this concern is raised, of course, very controversial differences in social and political theory emerge regarding the best way to approach these deficits and their distribution. Will an approach geared toward the development of new forms of social solidarity and ego-psychological developments be able to address these deficits?[46] Or do the arguments we have been making here point rather in the direction of a more paternalist, even if only "nudge paternalist" direction?[47] At this point, it seems an open question.

6. Conclusion

Our focus in this paper has been to suggest a more externalist understanding of procrastination and, in particular, of our how our distributed will and its supportive social scaffolding enables us to keep procrastination in check (to the extent that we are able to). Thinking about procrastination in this way has several attractive implications. It provides an explanation of individuals' ability to stave off procrastination that is compatible with what we are learning about the limits of human cognition and rationality. It provides a framework for thinking creatively

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46   Habermas, "Individuation through Socialization: On George Herbert Mead's Theory of Subjectivity."

47   Thaler and Sunstein, *Nudge*. See also, Joel Anderson, "Nudge Paternalism and Autonomy Gaps," ms. 2008.

about new kludges and scaffolding that can improve individuals' wellbeing, without needing to rely on unrealistic and illiberal therapeutic strategies that involve changing individuals' personality or cognitive style. And, finally, it opens up a set of important and neglected issues within public policy, social ethics, and political philosophy, having to do with the collective responsibility for maintaining public (and perhaps even unchosen) forms of scaffolding.

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