Addiction, procrastination, and failure points in decision-making systems

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 $\label{eq:abstract:} Abstract: \ {\rm Redish} \ et \ al. \ suggest \ that \ their \ failures-in-decision-making \ framework \ for \ understanding \ addiction \ can \ also \ contribute \ to \ improving \ addiction \ can \ also \ contribute \ to \ improving \ addiction \ can \ also \ contribute \ to \ improving \ addiction \ can \ also \ contribute \ to \ addiction \ can \ also \ contribute \ to \ addiction \ can \ also \ contribute \ to \ addiction \ can \ also \ contribute \ to \ addiction \ can \ addiction \ addiction\ \ addiction \$

our understanding of a variety of psychiatric disorders. In the spirit of reflecting on the significance and scope of their research, I briefly develop the idea that their framework can also contribute to improving our understanding of the pervasive problem of procrastination.

Starting from the idea that addiction involves "the continued making of maladaptive choices, even in the face of the explicitly stated desire to make a different choice" (target article, sect. 1), Redish et al. seek to develop a unified framework for addiction by (1) focusing on research concerning action selection and decision making, and (2) identifying failure points in our decision-making system. As they suggest, this approach may be fruitful for understanding not just addiction, but a variety of psychiatric disorders. I suspect that they are correct, and I want to develop a somewhat different but related suggestion, namely, that their approach can contribute to an improved understanding of the pervasive problem of procrastination.

Although procrastination is more common than addiction, it can figure as a crucial obstacle to realizing intentions to quit engaging in harmful addictive behavior. This fits neatly with the plausible conception of procrastination according to which it involves putting off an action that one should, given one's ends and information, perform promptly.

Even more so than addiction, which is still popularly cast as, at least in part, the product of powerful cravings that disable agents from acting voluntarily and in accordance with their decisions, procrastination is generally assumed to be the product of voluntary choices, and so the failures-in-decision-making approach that Redish et al. employ in their work seems particularly appropriate with respect to understanding procrastination. What better place to look for an understanding of self-defeating but voluntary delays than in research on failure points in our decision-making system?

The most established model of procrastination connects procrastination to problematic discounting processes (O'Donoghue & Rabin 1999a; 1999b; 2001), which is one of the vulnerabilities that Redish et al. discuss in their work. Like other animals, humans seem to discount future utility in a way that sometimes prompts preference reversals (Ainslie 2001; Kirby & Herrnstein 1995; Millar & Navarick 1984; Solnick et al. 1980). This can result in an agent's voluntary acting in a way that he or she planned against and will come to regret. The agent may, for example, keep making exceptions to his or her ongoing plan to cut down on indulgent purchases in order to save money for retirement. Discounting-induced preference reversals can thus foster procrastination.

A recent, complementary model of procrastination focuses on another vulnerability, one that is not directly discussed by Redish et al. but fits very well with their approach, namely, our vulnerability to intransitive preferences (Andreou 2007). Intransitive preferences (where, in particular, one cannot rank a set of options from most preferred to least preferred because there is a circularity in one's preferences) are often prompted by choice situations in which indulgences with individually negligible effects (such as smoking a cigarette) have momentous cumulative effects. Consider an agent who enjoys smoking but also values decent health. Someone in this situation may prefer, for all n, quitting after n+1 cigarettes to quitting after n cigarettes, but also prefer quitting after a relatively low number of cigarettes to quitting after a very high number of cigarettes. This agent has intransitive preferences, and is vulnerable to intransitivity-induced procrastination (Andreou 2005)

Other interesting ideas concerning procrastination might fit comfortably within and be illuminated by Redish et al.'s framework. Consider, for example, the familiar idea that procrastination may be prompted by fear of failure, which may, in different cases, be the product of different vulnerabilities. For example, in some cases, fear of failure may result from the overvaluation of the expected value of stability; while in other cases, it may result from excessively (and perhaps obsessively) focusing on

f one possible outcome rather than appropriately distributing one's attention over the range of outcomes associated with a situation.

Consider next the idea that procrastination is strongly associated with the pursuit of "ephemeral pleasures" and "ephemeral chores" (Silver & Sabini 1981). Ephemeral pleasures and ephemeral chores are often more immediately gratifying or at least less aversive than the goal-directed actions that are called for by long-term projects. Moreover, ephemeral pleasures and ephemeral chores are often individually compatible with one's long-term projects, though they can accumulate in a way that interferes with these projects. These points suggest a connection between procrastination mediated by the pursuit of ephemeral pleasures and ephemeral chores, on the one hand, and problematic discounting processes or intransitive preferences, on the other.

The vulnerabilities I have been focusing on are vulnerabilities in the planning system, which is only one part of our decision-making system. As Redish et al. stress, problematic decisions can also result from vulnerabilities in the habit system or from vulnerabilities in the interaction of the planning system and the habit system. In the case of procrastination, it seems clear that planning-based vulnerabilities can foster habit-based vulnerabilities as well. If, for example, one's intransitive preferences prompt one to repeat individually negligible but cumulatively destructive actions, a habit-based vulnerability may flourish atop one's planning-based vulnerability. Soon enough, automatic indulgence will replace rationalized indulgence.

Relatedly, coping with procrastination often involves dealing with both planning-based vulnerabilities and habit-based vulnerabilities. Again, consider the agent whose intransitive preferences prompt intransitivity-induced procrastination. Once the agent's problematic indulgences are supported by habit as well, overcoming procrastination will involve (1) dealing with the planning system failure by, for example, adopting a plan that draws some bright lines in order to stop oneself from sliding down the slippery slope along a self-destructive path; and (2) overhauling one's habits so that acting accordingly becomes second nature.

In short, in addition to contributing to our understanding of addiction, Redish et al.'s failures-in-decision-making approach is suggestive with respect to the related, but more pervasive problem of procrastination. Indeed, it is probably less controversial to propose that the approach is well suited to providing a unified framework for procrastination than to propose that it is well suited to providing a unified framework for addiction.