Temptations as Impulsivity: How far are Regret and the Allais Paradox from Shoplifting?

Elias L. Khalil *

Department of Economics, Monash University, Clayton, VIC 3800, Australia

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ABSTRACT

This paper uses shoplifting as an iconic example of succumbing to temptation, or weakness of will. It proposes that temptation is the outcome of impulsivity—i.e., biased *over*-confident (suboptimal) belief in success. This proposal challenges the standard literature that portrays temptation as the outcome of present-biased preferences. The payoff of the proposed modeling is that it can easily explain, first, regret, and second, the Allais paradox. Concerning regret, it is nothing but impulsivity-in-reverse: Regretting a rational decision means changing your belief about that decision so that what appeared optimal at the time now appears suboptimal. Concerning the Allais paradox (the certainty effect), it is the outcome of people's fear of regret. Fear of regret leads people to become over-cautious, using biased *under*-confident beliefs that lead them to compulsive behavior such as seeking zero-risk options.

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1. When the Rich and Famous Are Caught Shoplifting

Many people are intrigued when they read news about the rich and famous getting caught shoplifting. Such people, for certain, are not professional thieves. And for certain, the monetary benefit is usually miniscule relative to the expected cost of infamy, shame, and maybe jail time.

According to the non-profit National Association for Shoplifting Prevention (based in Melville, New York), most shoplifters act on impulse, i.e., without much planning. In particular:

- "Shoplifting is often not a premeditated crime. 73 percent of adult and 72 percent of juvenile shoplifters don't plan to steal in advance."
- "Shoplifters say they are caught an average of only once in every 48 times they steal. They are turned over to the police 50 percent of the time."
- "Approximately 3 percent of shoplifters are "professionals" who steal solely for resale or profit as a business. These include drug-addicts who steal to feed their habit, hardened professionals who steal as a life-style and international shoplifting gangs who steal

for profit as a business. "Professional" shoplifters are responsible for 10 percent of the total dollar losses."
- "The vast majority of shoplifters are "non-professionals" who steal, not out of criminal intent, financial need or greed but as a response to social and personal pressures in their life."
- "The excitement generated from "getting away with it" produces a chemical reaction resulting in what shoplifters describe as an incredible "rush" or "high" feeling. Many shoplifters will tell you that this high is their "true reward," rather than the merchandise itself."
- "Most non-professional shoplifters don't commit other types of crimes. They'll never steal an ashtray from your house and will return to you a $20 bill you may have dropped. Their criminal activity is restricted to shoplifting and therefore, any rehabilitation program should be "offense-specific" for this crime."
- "Habitual shoplifters steal an average of 1.6 times per week."[1]

The core thesis of this paper, which aims to account for these observations, is that it is better to view temptations, weakness of will, or what economists call "dynamic inconsistency", as the outcome of impulsivity. There is a huge empirical literature in psychology on impulsivity which

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[1] http://www.shopliftingprevention.org/ (checked last: 27 August 2015).

cannot be reviewed here [DeYoung, 2010]. As defined here, impulsivity is the result of acting according to biased beliefs in the direction of optimism or inflated expectation of success. Shoplifters realize, at a deep level, that they are taking unjustified risks—and this may explain why they take them. It is not (or not only) the consumption, but mainly the thrill that they enjoy upon learning that they have won and beaten the odds. The enjoyment of this thrill, the force behind impulsivity, may also explain the occasional gambling at casinos, where people know that the expected value of a $1 bet is far below the $1 at hand.

The view proposed here challenges the received literature, which regards temptations or dynamic inconsistency as the outcome of biased *time preferences*. Such bias is supposedly the outcome of a biological tendency to favor present consumption *excessively*, i.e., favoring in excess of what is permitted by the usual linear discounting of future rewards.

Prior to detailing the core thesis, two clarifications are in order:

1. This paper defines the term "temptation" as the psychological state that prompts a person to succumb to temptation. Most people are not tempted, or at least not tempted on a daily basis, to shoplift. To be tempted to shoplift is already to be in a state that strongly predisposes one to shoplift. Since the phenomenon of resistance to temptation is not in focus here, for convenience, this paper uses the terms "temptation" and "succumbing to temptation" interchangeably.

2. This paper assumes that when one is tempted, one is choosing a suboptimal option. This does not mean that the action is sub-subrational *in the sense that the underpinning preferences are inconsistent*. On the contrary, when one is tempted, the preferences are consistent. They are consistent when one obeys the most essential axioms of rationality, viz., the transitivity axiom and the completeness axiom. One might also include local non-satiation if one demands unique optimum, rather than multiple optima. So, while preferences are consistent, one my still fail to execute, for whatever reason, the optimum choice. One may instead, that is, chose a suboptimal choice. One reason is temptation. When the actual action fails to obey the optimum, as in temptation, the action does not obey a non-essential axiom of rationality, viz., the weak axiom of revealed preference (WARP) [Samuelson, 1938]. For WARP, as long as one has chosen bundle A over bundle B, it means definitely that one prefers A over B. WARP does not allow for the possibility that one's action may deviate from one's true preference. If we want to identify temptation, we need to reject WARP, which this paper does.

But how should we model temptations-as-impulsivity? This paper starts with shoplifting as the iconic example of impulsivity. Then it exhibits the payoff of the proposed model in explaining two other phenomena that, so far, have been viewed as having no connection to temptations or dynamic inconsistency: 1) regret; and 2) the Allais paradox. It will become clear that regret is impulsivity-in-reverse and the Allais paradox arises from the fear of regret, i.e., the fear of impulsivity-in-reverse. But first, we need to examine the received literature.

2. Review of the Literature and the Proposed Approach

2.1. Review

With some differences in emphasis, the economics literature has concluded that temptation or weakness of will is about hyperbolic discounting, and that such discounting is the outcome of "present-biased preferences" [Laibson, 1997; O'Donoghue and Rabin, 1999, 2001; Gul and Pesendorfe, , 2001, 2004a,b] or the outcome of dual-selves in conflict [Thaler and Shefrin, 1981; Fudenberg and Levine, 2006].[2] This view

can be traced back to the pioneering work of the psychologist Ainslie, 1975, 1992, 2001, 2005. Ainslie generalized Herrnstein's matching law to model inconsistent bias as the outcome of hyperbolic discounting. Ainslie and the economists generally treat preferences over consumption goods (tastes) as if they are the *reason* for temptation. These approaches usually, but not universally, justify such a view on the assumption that humans are programmed by an emotional-biological system that favors—beyond the linear discounting factor—present consumption over future consumption. Other present-biased preference and dual-self approaches do not appeal to biology or visceral explanations [Benhabib and Bisin, 2004; Brocas and Carrillo, 2008; Köszegi and Rabin, 2009; Fudenberg and Levine, 2006; O'Donoghue and Rabin, 1999, 2001]. Nonetheless, insofar as they start with the set of tastes, they offer, first, an *ad hoc* and, second, narrow view of temptations.

First, the received literature, and its emphasis on taste, is *ad hoc* because it presumes that the phenomenon is the outcome of tastes. Then, one may ask, why do some people have present-biased tastes with respect to some goods—but not other goods? To start with tastes raises more question than it answers.

Second, the received literature is narrow because it misses the connection between temptation and impulsive behavior in general. Such impulsive behavior is not only about temptations that *directly* undermine the future self, as in self-cheating behavior ranging from overeating to under-saving and slackening. It is also about temptations that *indirectly* undermine the future self, as in cheating of others ranging from shirking to shoplifting. If one starts with tastes, in particular present-biased tastes, one can only see cases that *directly* undermine the future self—overlooking the important cases of cheating others as belonging to the same class of phenomenon.

2.2. The Proposed Approach

Instead of starting with biased time preferences, this paper commences with biased beliefs and explores their implications. In particular, the proposed approach explains succumbing to temptation in terms of beliefs biased in the direction of optimism, i.e., suboptimal over-confidence: the present self systematically over-estimates his or her probability of success in undertaking a risky action. Interestingly, Ainslie also recognized the role of over-confidence, but only as a way to explain why people impose on themselves what can be called "internal constraints," i.e., rules or devices that prevent them from even being exposed to temptations. According to Ainslie, people impose internal constraints on themselves because they are aware of their over-confidence and do not believe that they will succumb to temptation on only one occasion. They are ever afraid that a single deviation from the internal constraint would place them on a slippery slope leading to further suboptimal choices. This paper takes Ainslie, 1992 insight a bit further and argues that temptations, and not only internal constraints, can be traced to over-confidence.

The proposed biased beliefs approach in explaining temptations has many payoffs. Aside from offering a unified framework for the analysis of cheating others (such as in shoplifting) and shirking [see Khalil, 2016 a, b], it can explain, first, regret, and, second, the Allais paradox.

Regret, as defined here, is not about self-blame that prompts one to learn from experience about the probability distribution of the states of nature. Some researchers confuse the two beyond the issue of terminology. For instance, Bourgeois-Gironde, 2010 discusses regret in the sense of how economists studied it in the 1980s, i.e., as an explanation of the certainty effect [see Loomes and Sugden, 1982]. But Bourgeois-Gironde sets up an experiment that really concerns self-blame, i.e., how the emotion of blame (which calls "regret") is rational since it teaches people not to ignore relevant signals. In this paper, regret is an emotion that arises from changing one's beliefs of what was known in the past, so that an act (the focus of regret) that appeared optimal at the time of decision, now appears as suboptimal, i.e., the person should not have taken it. This change in beliefs about one's past acts amounts to tipping

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[2] The dual-self approach should not be confused with the multiple-self approach. The term "multiple-self" term is better reserved for the approach of Amartya Sen, George Akerlog, Rachel Kranton, Roland Bénabou and Jean Tirole. This approach stresses that agents are motivated by a sense of identity, self-image, or moral compass that transcend utilitarian calculation [Elster, 1986].