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Time-inconsistent Preferences and Consumer Self-Control

STEPHEN J. HOCH
GEORGE F. LOEWENSTEIN*

Why do consumers sometimes act against their own better judgment, engaging in behavior that is often regretted after the fact and that would have been rejected with adequate forethought? More generally, how do consumers attempt to maintain self-control in the face of time-inconsistent preferences? This article addresses consumer impatience by developing a decision-theoretic model based on reference points. The model explains how and why consumers experience sudden increases in desire for a product, increases that can result in the temporary overriding of long-term preferences. Tactics that consumers use to control their own behavior are also discussed. Consumer self-control is framed as a struggle between two psychological forces, desire and willpower. Finally, two general classes of self-control strategies are described: those that directly reduce desire, and those that overcome desire through willpower.

The same person will vary in his mood, being at one time impatient, and greedy for present enjoyment; while at another his mind dwells on the future, and he is willing to postpone all enjoyments that can conveniently be made to wait. Sometimes he is in a mood to care little for anything else: sometimes he is like the children who pick the plums out of their pudding to eat them at once, sometimes like those who put them aside to be eaten last. [Marshall 1890, p. 100]

Who among us has never been guilty of being unable to deny himself the momentary enjoyment of that luscious dessert or the fragrant Havana that the doctor ordered us to forgo? And that in spite of knowing perfectly well that it is going to bring an aggravation of our ailment which subsequent unbiased appraisal will recognize as being far more unpleasant than the renunciation of that trifling enjoyment. [Böhm-Bawerk (1898) 1959, p. 269]

In marketing, the dominant paradigm used to describe consumer behavior is the rational choice

model. Consumers decide whether to make a purchase, and which purchase to make, by weighing the costs and benefits of alternatives. The terminology used to describe these decisions—"trade-offs," "attributes," "choices," "decision rules"—reveals a particular view of behavior. Consumers are seen as dispassionate information processors, evaluating alternatives in a boundedly rational fashion and effortlessly implementing decisions (Bettman 1979). Indeed, much purchase behavior is probably well described by these utilitarian terms. But, as suggested in the earlier observations of Marshall and Böhm-Bawerk, a more complete understanding of consumer behavior must recognize that people are influenced both by long-term rational concerns *and* by more short-term emotional factors.

Holbrook, O'Shaughnessy, and Bell (1990) write, "Recent approaches to consumer research have tended to regard consumer behavior as a mode of reasoned action or as a repository of emotional reactions . . . [but] a one-sided focus on either aspect by itself—actions or reactions—provides a distorted view of the consumption experience." We agree. There is a clear need to examine the interaction between rational and hedonic motives—between what Albert Hirschman (1977) called the "interests" and the "passions" and what Abelson (1963) labeled "cold" and "hot" cognition. Although each perspective adequately describes a wide range of consumer behaviors, neither alone can provide a complete account. One reason that little progress has been made in integrating the rational with the hedonic is an incompatibility in vocabulary. Typically, the rational side has been modeled formally

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while the hedonic side has been described more qualitatively. One way to tie the cognitive to the emotional is to place them in a framework with a common language.

We do not intend to provide a complete model of the interplay between cognition and emotion. Our interests here are narrower and our efforts more modest. We offer an economic-psychological model that seeks to integrate the rational and emotional forces influencing consumer self-control. Although consumers are often evenhanded in their balancing of present and future benefits and costs, certain situations can induce extreme impatience. At such times, buying assumes a more hedonic character (Hirschman and Holbrook 1982), one better characterized by sudden increases in desire accompanied by inner conflict and attempts to control one's own behavior. Shifts in time perspective of this type have been labeled "myopic" or "time-inconsistent" by economists (Strotz 1956) and "impulsive" by psychologists (Ainslie 1975). Self-control, as we define it, consists of efforts on the part of the consumer to avoid or resist behaving in such an inconsistent manner.

TIME-INCONSISTENCY

A time-inconsistent choice is one that would not have been made if it had been contemplated from a removed, dispassionate perspective; it represents a transient alteration in tastes, not a permanent reevaluation of an alternative due to receipt of new information (cf. Stigler and Becker 1977). Time-inconsistent behavior is of special interest to economists because of its significance for macroeconomic policy (Kydland and Prescott 1977) and savings behavior (Thaler and Shefrin 1981). Psychologists have been concerned mainly with the connection between impulsivity and dieting, addiction, and other self-regulation problems. The ability to delay gratification has been studied extensively in developmental and clinical settings (Mischel 1974).

Time-inconsistency raises important questions about consumer sovereignty (Strotz 1956). Are impatience-driven decisions as legitimate (normative) as the evenhanded preferences that are usually assumed to reign? Is there no arguing with tastes, as economists often assert? The consensus of social scientists, and apparently of consumers themselves, is that time-inconsistent preferences are not as legitimate as their more farsighted counterparts. Consumers talk about being driven to buy something against their own better judgment, and, as a result, we commonly observe attempts by consumers to control their own behavior, to avoid or resist episodes of extreme impatience. Popular magazines aid consumers in control efforts by offering elaborate instructions on how to fight the "urge to splurge" and avoid "binge buying" (*Time* 1987).

This article begins with a discussion of consumer time preference and the causes of time-inconsistency.

We propose a model to explain consumer impatience and the circumstances under which it will occur. Specifically, the model addresses the question of how and why consumers experience "sudden, often powerful urge(s) to buy something immediately" (Rook 1987) that can involve temporary overriding of long-term preferences. Next, we discuss tactics that consumers use to control their own behavior and to avoid time-inconsistency. We organize our discussion around a two-factor model of behavior, where the battle for self-control is conceptualized as a struggle between the two psychological forces of desire and willpower. We distinguish two classes of self-control strategies: (a) those that attempt to directly reduce desire, and (b) those that seek to overcome desire through a variety of willpower tactics.

Before continuing, it is important to place this work in proper perspective. First, we assume that consumers do indeed have long-term preferences. We do not advocate (or require) the extreme position of some economists, who argue that tastes are stable and essentially constant across all consumers. Rather we assume that consumers have long-term goals that, in turn, guide their preferences (Miller, Galanter, and Pribram 1960). Second, we assume that passionate behavior can be modeled. We retain the essential cost-benefit orientation of the utilitarian perspective, but modify it to incorporate the emotional reactions excluded from most economic models. Finally, our approach is most relevant to contemporary Western consumers, where possessions play an indirect role in defining individually based identities, and less relevant to more traditional societies, where group identity is the guiding force behind self-concept (Belk 1984).

A REFERENCE-POINT MODEL OF DESIRE

Why do people sometimes act inconsistently over time engaging in behavior that would have been rejected if contemplated in advance and that may be regretted after the fact? This question has puzzled generations of social scientists. One view, espoused by Marshall (1890) in the opening quote, is that time-inconsistent behavior arises from unpredictable changes in moods and tastes (also see Bass 1974). In a modern rendition of this view, Winston (1980) proposed an economic model of impulsivity in which a decision maker randomly vacillates between two sets of preferences, one myopic and the other farsighted. Winston describes a variety of strategies that people can employ to maximize expected utility in the face of inconsistent preference fluctuations. This economic model of impulsivity has two shortcomings. First, it places time-inconsistent preferences on an equal footing with temporally consistent preferences. But impatience is not simply the random manifestation of an alternate and equally valid preference ordering; rather,

it is a momentary and involuntary departure from the consumer's dominant preferences. Even while behaving impulsively, consumers often view their own decision making as distorted (Rook 1987). Second, the random-preference model fails to shed light on the basic question of when and why myopic preferences come into play.

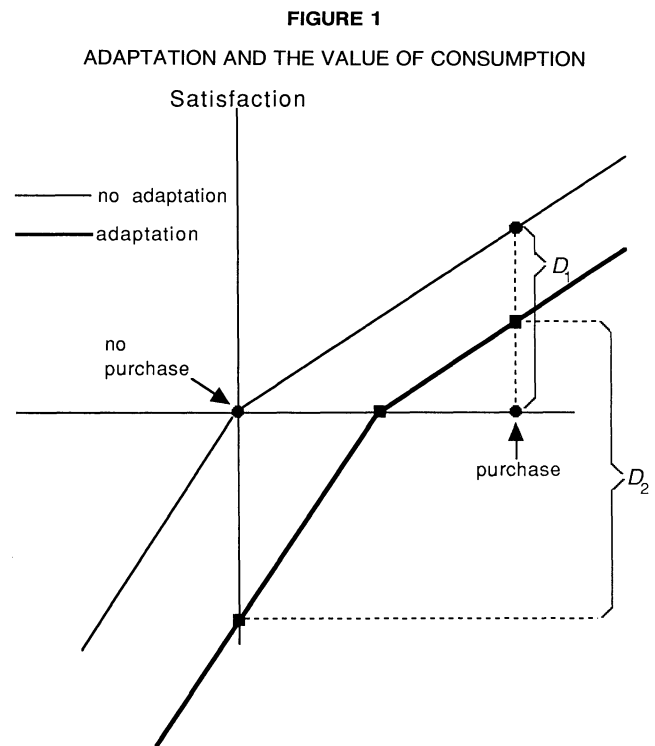
An alternative and better-known explanation of impatience (Ainslie 1975; Strotz 1956) is based on the economic concept of discounting. According to this view, people are disproportionately attracted to immediately available rewards. When two rewards (e.g., the pleasure of a cigarette and the pleasure of good health) are both substantially delayed, the individual is able to make a rational trade-off between them. However, when one reward (the cigarette, in this example) is imminent, it exerts a disproportionate attraction. The discounting perspective is accurate as far as it goes, but it leaves basic questions unanswered. Why are certain types of goods (e.g., dessert) associated with impulsivity and not others (e.g., gasoline)? Discounting also fails to explain why other factors, such as physical proximity, are commonly associated with time-inconsistency.

Although recognizing the importance of time (as well as other dimensions of proximity), our model of impatience differs from the economic discounting perspective. We believe that time-inconsistent preferences are due to sudden increases in desire brought on by a shift in the consumer's reference point. Reference-point shifts can be precipitated by any number of factors (e.g., physical proximity in a store), causing the consumer to partially adapt to the notion of owning or consuming the product. After a reference point shifts, consumers not only attach positive utility to the object itself (what one might call a standing or existing desire before the reference-point shift), but they also attach negative utility to failure to consume the object. Failure to purchase implies more than the forgone pleasure from consumption; the individual actually feels deprived. This deprivation is a psychological state of need analogous to physiological states of need (which can range from hunger and thirst to addiction).

Reference Points and Deprivation

The concept of a reference point, or adaptation level, has a long history in psychology. Reference points play a central role in research on perception (Helson 1964), satisfaction with achievement (Lewin et al. 1944), distributive justice (Walster, Berscheid, and Walster 1973), saving behavior (Duesenberry 1949), and life satisfaction (Brickman, Coates, and Janoff-Bulman 1978). The reference point reflects the fact that people are less concerned with absolute attainments than with attainments relative to some psychologically relevant comparison point.

Figure 1 illustrates the effect of a reference-point shift using a framework introduced in Kahneman and



Tversky's (1979) prospect theory and more recently applied to consumer choice (Thaler 1980, 1985) and intertemporal choice (Loewenstein 1988). The value function represents the consumer's satisfaction level exclusive of any costs (the y -axis) as a function of a discrete outcome level (purchase or nonpurchase) relative to some reference point. The reference point is located where the value function intersects the x -axis. The value function is assumed to be steeper for negative departures (losses) than for positive departures (gains) from the reference point (Bell 1982, 1985; Fishburn 1977; Kahneman and Tversky 1979).

Consider a good that would yield a value of D_1 if it were purchased. The no-adaptation value function, represented by the lighter line that goes through the origin, is drawn such that the purchase of the good yields D_1 , and nonpurchase yields zero. This no-adaptation function depicts the case of a consumer who would derive satisfaction from owning an object (based on long-term needs) but who has not adapted to the notion of possessing it. With no adaptation, the steeply sloped negative region of the value function is not relevant.

The value function's usefulness lies in showing what happens when the consumer partially adapts to possession of the good. The partial adaptation case is depicted by the bold-line value function. As compared with the no-adaptation situation, the zero point of the value function has moved to the right, signifying that the consumer is now in an intermediate state between

owning and not owning the product. Failing to make the purchase is no longer affectively neutral, but instead results in deprivation (the distance between the origin and where the bold value function intersects the y -axis). Now, overall desire for the product is represented by the distance D_2 (i.e., the utility resulting from consumption coupled with the relief ensuing from not feeling deprived).

In both the no-adaptation and adaptation cases, we define desire (D_1 and D_2) as the difference between owning and not owning the object. The graphic depiction of desire (D) in Figure 1 can be written in equation form,

$$D = \alpha(P - r) + \beta(r - 0), \quad (1)$$

where α is the slope of the value function in the positive region, β is its slope in the negative region, and r is the consumer's level of adaptation between purchase (P) and nonpurchase (0). The value P is normalized so that αP is equal to the consumer's no-adaptation level of desire for the good D_1 .

As long as $\beta > \alpha$, an increase in r will raise D . Desire represents the consumer's level of motivation to possess the object; in the no-adaptation case, it is based solely on a standing preference for the item. Because the consumer views the purchase as hypothetical, failure to purchase does not result in deprivation (the consumer possesses nothing and, so, loses nothing). The consumer will buy the product whenever desire exceeds the costs (both economic and psychic) of purchase. Deprivation, induced by partial adaptation, intensifies desire and the motivation to purchase because $D_2 > D_1$. The consumer who partially adapts has already had a taste and may dread the pain of having to forgo further tastes. Similarly, the bait-and-switch victim, who anticipates making a purchase but finds the item out of stock, will feel deprived and may feel compelled to purchase a substitute item to mitigate the immediate frustration.

Divergent social science research points to the powerful incentive value of negative departures from a reference level. Research on animal learning has distinguished three types of incentives: reward, punishment, and frustrative nonreward. Frustrative nonreward occurs "when we fail to reinforce a response that has previously been reinforced" (Skinner 1950, p. 203). There is evidence that frustrative nonreward has greater incentive value than either reward or punishment (Amsel 1958; Wagner 1959). For example, the powerful motivating effect of intermittent reinforcement can be explained in terms of the frustration brought on by nonreinforced trials (Amsel 1962). Research on social unrest also provides evidence for the significance of negative departures from reference levels. Most theories assume that discontent results from a negative discrepancy between current position and some reference value, whether the reference value is

expectations about the future or the consumption level of a referent individual or group (Austin 1977; Gurr 1970; Walster et al. 1973). Falling below one's reference point or adaptation level, whether biological or psychological, can lead to feelings of deprivation and provides the motivation to improve one's relative position.

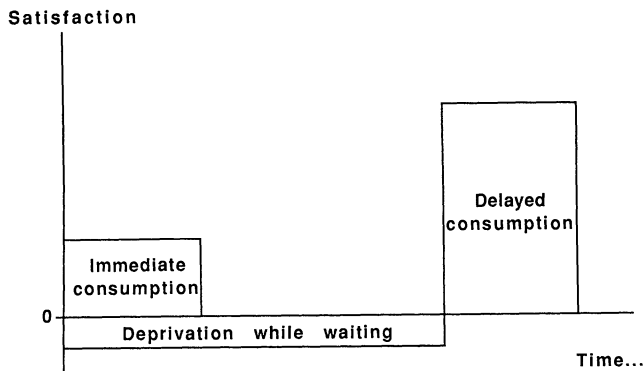
Dynamic Effects of Reference-Point Shifts. Although the reference-point shift depicted in Figure 1 provides a mechanism for the motive force behind time-inconsistency, it is a static conception. Most decisions made in the present have hedonic consequences that extend over time. If desire is not transient, the loss depicted on the value function will understate the deprivation anticipated or experienced by the consumer while consumption is delayed. The deprivation induced by a reference-point shift is not instantaneous, but may linger. Thus, the relevant loss must take into account the length of time during which the consumer feels deprived. Figure 2a depicts the choice between an inferior, immediate object and a superior, delayed object under conditions of partial adaptation. The smaller rectangle in Figure 2 represents the utility derived from consuming a smaller immediate reward; the larger rectangle depicts the utility derived from a larger delayed reward. The area marked "deprivation from waiting" represents the negative utility experienced while waiting for the larger delayed reward. The delayed reward could be a concrete object (e.g., a car) or something more abstract (e.g., long-term health benefits). As Figure 2a shows, the more deprived one feels while waiting, the greater is the incentive to consume quickly so as to terminate the stream of negative utility.

In certain cases, the consumer may be aware that desire for an object is transient and may opt for the delayed option, knowing that the deprivation will be short-lived. This situation is depicted in Figure 2b; with time, deprivation from waiting decreases. Often deprivation decreases with time because the consumer moves on to other activities. Reduced attention to the object of desire can result in a leftward shift of the reference point back toward the nonpurchase zero point in Figure 1. An example of decreasing deprivation over time can arise in eating behavior. Some people have learned that, even if they remain ravenous after a big meal, they should delay the decision to order dessert. The reason is that changes in osmotic pressure in the stomach and blood sugar that accompany eating, and reduce feelings of hunger, do not occur immediately (Guyton 1971). Within 20 minutes, however, the pain of abstinence usually fades. In other cases, desire may intensify over time, a situation illustrated in Figure 2c. Again, physical appetites provide a context for understanding such phenomena; feelings of hunger and thirst typically intensify if left unsatisfied. This

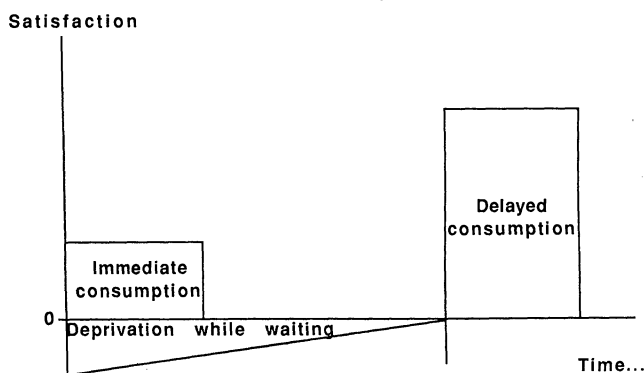
FIGURE 2

CHOICE BETWEEN IMMEDIATE AND DELAYED CONSUMPTION

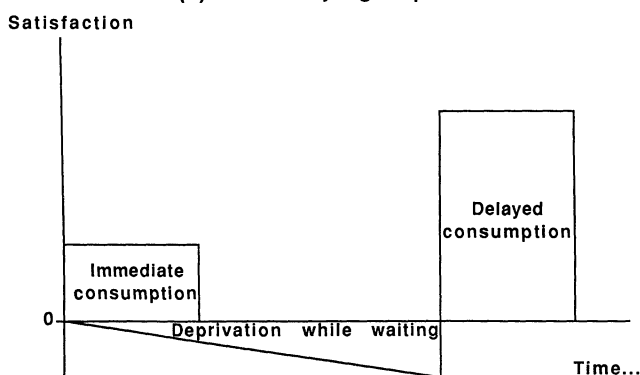
(a) Constant deprivation



(b) Transient deprivation



(c) Intensifying deprivation



may be one reason why physical appetites are such potent instigators of impulsivity; they just do not go away.

The pain associated with not buying is a recurring theme in consumers' accounts of their own impulsiv-

ity. For example, consumers asked to discuss recent impulse purchases (Rook and Hoch 1985) repeatedly commented on the difficulty of deferring consumption. "It gnaws at me until I buy it." "The feeling starts when I see something . . . it comes on very quickly and is a persistent nagging." The deprivation experienced by the consumer is, thus, analogous to a mild addiction. Addiction is a complex phenomenon with multiple stages, progressions, and influences (Marlatt et al. 1988). But some research suggests that the addict's powerful urge to consume is not so much a search for pleasure (addictive substances lose hedonic potency with prolonged use) as a flight from pain, the pain of not consuming (Silverstein 1976; Solomon and Corbit 1974).

In sum, we believe that time-inconsistent preferences are induced by reference-point shifts in which consumers adapt to possession of not-yet-purchased items. When reference points shift, the consumer's desire for the nonpurchased object increases. More importantly, the consumer desires to purchase or consume the object as quickly as possible so as to terminate the stream of deprivation. In the next section, we discuss environmental factors that can lead to reference-point shifts and promote impulsivity.

Proximity-induced Impatience

In general, reference-point shifts are induced by a process of accommodation or adaptation. People exposed to a persistent sensory stimulus (e.g., a noise or smell) adapt to that stimulus to the point at which they are no longer aware of it; they are sensitive only to deviations from the adapted-to-stimulus level. Regarding consumer behavior, reference-point shifts are caused by the consumer's adapting to possession of a good that has not been purchased. There are many mechanisms that can cause such adaptation (a rightward shift of the reference point in Fig. 1). All of the mechanisms involve increasing the consumer's proximity to the good along some dimension.

Physical Proximity. Perhaps the most potent inducer of reference-point shifts is physical proximity. The effect of physical proximity on impulsivity has been well documented in experiments on delay of gratification by Mischel (1974). In a typical experiment, children are placed in a room and taught that they can quickly summon the experimenter by ringing a bell. They are then given a choice between an immediate inferior reward (e.g., a single marshmallow) or a delayed superior reward (two marshmallows). If the child is able to wait for the experimenter to return without ringing the bell, s/he obtains the superior item. Impulsivity is measured by how long the subject waits before ringing the bell. In an early experiment, Mischel and Grusec (1967) examined the effect of the visible presence of the reward on willingness to wait; when either the immediate or delayed reward was in view,

subjects were less willing to delay. It appears that placing the object in view leads to a reference-point shift that increases deprivation and makes waiting more difficult.

A variety of marketing practices may induce a reference-point shift by increasing physical and sensory proximity. Much advertising shows the product in use, increasing proximity by vividly simulating the experience (MacInnis and Price 1987; Wells 1987). Distilled spirits ads opt for simple "bottle, glass, and ice" depictions to help consumers visualize the experience. Marketers also use atmospherics (Kotler 1973–1974; Nord and Peter 1980) to provide the senses with a hint of the real experience. For example, Mrs. Field's Cookies has successfully overcome high rents by pumping chocolate-chip cookie odor into the heavily-trafficked corridors of American shopping malls. Sometimes marketers actually give the consumer a taste through sampling. Scratch-and-sniff perfume samples are accompanied by product order forms. Publishers who send books and magazines into the home with the explicit assurance that they can be returned if they are not wanted may also shift the consumer's reference point (Thaler 1980), as may sellers of Oriental rugs who encourage customers to borrow rugs to "see how they look in your home." Clearly there are often unanticipated transaction costs associated with product return; however, it is also the case that parting with a book that has graced one's coffee table, or a rug that has enhanced the atmosphere of one's living room, is more difficult than turning away from the same book or rug displayed with countless others in the retail outlet (Knetsch, Thaler, and Kahneman 1987).

Temporal Proximity. Earlier theoretical accounts of impulsivity (Ainslie 1975; Strotz 1956) focused on only one dimension of proximity, proximity in time. In the animal-learning literature, it is well known that the more immediate a reward, the greater is its reinforcing value (Chung and Herrnstein 1967). Hence, the immediate availability of a reward will tend to increase the desire for it. Research on time preference suggests that increasing temporal proximity not only increases desirability, but also increases impatience. Willingness to delay gratification in exchange for greater rewards decreases as consumption objects become imminent (Ainslie and Haendel 1983; Benzion, Rapoport, and Yagil 1987). The increase in impatience is due in part to nonexponential discounting (Ainslie 1975), but it is also exacerbated by a temporally induced reference-point shift (Loewenstein 1988).

In four experiments with five- to seven-year-old children, Irwin, Armitt, and Simon (1943) examined preference for immediate- and delayed-choice objects. Children were shown two toys, one to be received immediately and one later; preferences for the two toys were measured. The children overwhelmingly pre-

ferred the more temporally proximate toy (75 percent), whether faced with a one-week (82 percent) or three-minute (68 percent) delay in receiving the other toy. Loewenstein (1990) examined the effects of temporal proximity by manipulating the interval that high school sophomores anticipated waiting before receiving a reward object. Subjects either expected an early (e.g., four weeks) or a late delivery (e.g., eight weeks) of a \$7 gift certificate from a local record store. After a two-week delay, subjects were given a choice between \$7 at the early date or \$8.50 if they delayed until the late date. Subjects expecting an early delivery were less likely to wait than those expecting a later delivery (42 percent vs. 64 percent). Apparently, subjects adapted to their anticipated delivery dates, and those subjects who felt temporally closer to the reward were more impatient than those who felt temporally farther away.

Some marketing efforts may increase impatience by selling imminent opportunity, reminding the consumer that the product is "yours for the asking" or "only a phone call away." Pizza-delivery services that give a substantial discount if the pizza is not delivered within 30 minutes not only are guaranteeing a warm, nonsoggy product, but are also playing on the time element in a domain where impatience tends to be particularly severe. The discount raises the credibility of the claim and offsets any anticipated impatience once the pizza is ordered, since late delivery confers significant economic savings. Many direct-response advertisements are accompanied by a toll-free hot line allowing immediate ordering. Direct-mail catalog companies not only feature toll-free numbers with 24-hour order-taking operators, they also provide the option of next-day express delivery for an extra fee. Television-based marketers of carpeting offer next-day, in-home viewing of samples and 2–3-day delivery thereafter.

Social Comparison. A third factor that appears capable of inducing a reference-point shift is social comparison. People faced with an adverse social comparison want what their more fortunate peers already possess, and they do not want to wait. For example, sociological research (Easterlin 1974; Merton 1968; Stouffer et al. 1949) suggests that people of all income levels tend to compare themselves with others who are slightly better off than they are. Festinger (1954) argued that people prefer to compare themselves to "superior" others, for both informational and status reasons (cf. Brickman and Bulman 1977). A reference-point shift induced by social comparison increases proximity and may reduce willingness to delay consumption. Related research on coaction effects has found that people consume more food in the presence of others who are also consuming (Zajonc 1968). Terkel (1970) provides anecdotal evidence that, during the Great Depression, there was an upswing in gambling on horses and numbers; in this example, the relevant reference point may

have been previous income levels (i.e., an example of intraindividual social comparison and its effect on impulsivity).

Loewenstein (1990) experimentally demonstrated the effect of social comparison on impulsivity. Fifth-graders who won a moderate prize (\$4) in a competition against opponents who won a larger prize (\$8) displayed greater impatience than subjects who won the same moderate prize but whose opponents won a smaller prize (\$2). Losers were willing to give up more than winners to get the reward immediately (43¢ vs. 12¢). Losers also required a larger premium than winners for enduring a further delay (53¢ vs. 23¢). If losers use their lucky peers as a consumption standard and partially adapt to what they might have gotten if they had won, then the reference-point model of desire predicts greater feelings of deprivation and impatience for losers than for winners.

Advertising based on modeling and identification with prototypical product users (Peter and Olson 1987) may induce reference-point shifts through social comparison. An example is VALS-inspired advertising (e.g., American Express) that targets emulators, who model much of their behavior after the more materially successful achievers (Holman 1984). Although identification with a product user undoubtedly increases desire by increasing the slope of the value function on the gain side, our analysis suggests that identification may also encourage buying through a rightward shift of the consumer's reference point. Of course, the strength of the reference-point shift will depend on the level of identification with the product user (Krebs 1975).

SELF-CONTROL: THE CONFLICT BETWEEN DESIRE AND WILLPOWER

Consumers are not passive victims of their own fluctuating preferences. Those who have experienced time-inconsistency and its consequences (e.g., the regret associated with closets full of unworn clothes or embarrassing product returns) are likely to develop self-control strategies for imposing consistency on their own behavior. In this article, we frame the self-control problem as a psychological conflict between desire (the initiating hedonic force previously discussed) and willpower (strategies used to overcome desire).

Two-factor models of behavior have been an integral part of many accounts of self-control (Freud 1911; James 1890; McIntosh 1969; Winston 1980). In psychoanalytic theory, the conflict is represented as an oscillation between primary process thinking (the id or pleasure principle), which is impulse-driven, largely irrational, and seeks immediate gratification at any and all costs, and secondary process thinking (the ego or reality principle), which is patient, logical, and has the will to postpone gratification in the service of future long-run gains or goals (Hilgard 1962).

The ability to maintain self-control and successfully implement long-run decisions depends on the relative strength of the opposing forces of desire and willpower. The consumer's conflict is portrayed in Figure 3. The consumer can rest at any place on the diagram. The x - and y -coordinates represent current levels of desire and willpower. In Figure 3a, the consumer begins with a standing level of desire for a product, D_1 . To illustrate, imagine a consumer who has previously decided on a long-term course of action, weight control, and vows not to eat desserts. At D_1 , willpower is greater than desire, so the consumer does not want to purchase. If, however, the consumer were to come into direct contact with a previously rejected alternative (e.g., by being confronted by the dessert cart after a lavish meal), the increased proximity might boost desire and move the consumer rightward to D_2 . With a large enough increase in desire, the consumer can cross over the "buy line" to the point where desire now dominates willpower. At this point, there is a need for self-control. A time-inconsistent purchase will result unless the consumer can quickly move back above the dashed diagonal.

Figure 3b shows that there are several ways that the consumer can respond. First, s/he may buy, and possibly consume, the product immediately in an attempt to sate the desire; in such cases the consumer never moves from D_2 . Purchases of this kind may occur with the minimum conscious deliberation characteristic of automatic or mindless behavior (Langer, Blank, and Chanowitz 1978; Langer and Imber 1980; Weinberg and Gottwold 1982), or the pure reaction with little or no cognition (Holbrook et al. 1990). Alternatively, consumers may experience an "interrupt" (Bettman 1979; Simon 1967) that alerts them to the need for cognitive deliberation. Interrupts can assume many forms. Consumers may recognize that they are in a situation in which they previously made purchases that were regretted (e.g., in a fancy clothing store right after payday). The act of paying for the item may also act as an interrupt. Even desire itself may serve as an interrupt; too sudden an increase in desire may lead consumers to be suspicious of their motives.

The desire-willpower framework illustrated in Figure 3b makes it clear that there are two distinct forms that self-control attempts can take: desire-based and willpower-based. First, consumers may attempt to directly reduce desire (a direct movement to the left) by physically or psychologically reducing proximity to the product. Alternatively, consumers may attempt to overpower desire (an upward movement) by relying on a variety of willpower strategies. Willpower attempts will be successful to the extent that consumers cannot offer persuasive rationalizations (a downward movement) that might legitimate a time-inconsistent preference.

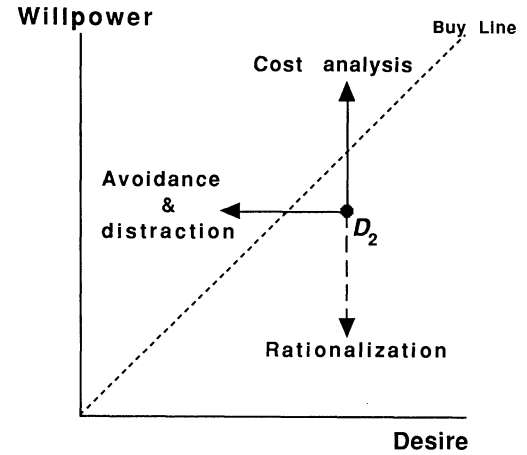
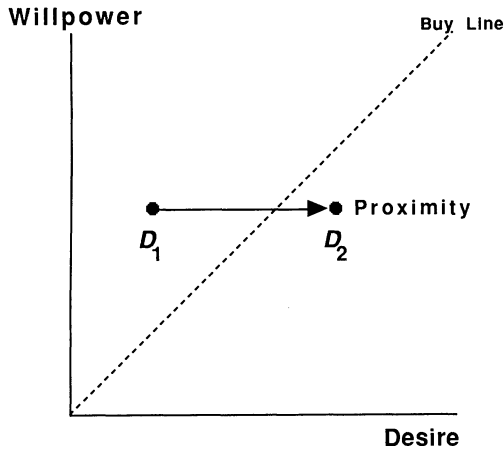
Before moving on, it is important to note that consumer self-control, however, need not be as reactive

FIGURE 3

DESIRE-WILLPOWER MODEL OF SELF-CONTROL

(a) Time-inconsistent preference induced by proximity

(b) Strategies for maintaining self-control



as suggested in the desire-induced, interrupt view. There are other reasons people might want to regulate their immediate consumption behavior. In his discussion of modern hedonism, Campbell (1987) offers a much more proactive conception of self-control. For Campbell, much pleasure is sought via emotional stimulation (imagination, window shopping) to create a necessary level of novelty. Drawing on earlier work by Scitovsky (1976), Campbell offers a conception of self-control that could be labeled “pleasure management.” Consumers engaged in pleasure management recognize (at least implicitly) that there is a trade-off between comfort and pleasure. Scitovsky defined comfort as residing at an optimal state of arousal. He argued that comfort in itself is not pleasurable; pleasure is generated during the process of getting to the comfortable state (either increasing or decreasing arousal to the optimal level). Pleasure management involves self-imposed periods of deprivation to increase future pleasure. It demands consumer foresight, requiring a consumer worldly enough to appreciate George Bernard Shaw’s observation that “There are two tragedies in life. One is not to get your heart’s desire. The other is to gain it.” Everyone engages in pleasure management to some degree. Not eating between meals so as to better enjoy dinner, and taking a 10-kilometer run so as to experience the pleasure of stopping, are examples of deferring short-term gains for the promise of long-term pleasure. Pleasure management is a fascinating form of self-control that deserves more study.

Desire Reduction

One way in which consumers can maintain self-control is by manipulating their own reference points.

Although standard models of decision making take tastes as fixed and invariant, there has been some work on the self-manipulation of preferences. Most relevant to our reference point model is the literature on aspiration level. Although aspiration level sometimes is considered as exogenously specified, much of the literature has recognized that individuals have some ability to control their own aspirations. Downward manipulations of aspirations may serve to reduce the frustration arising from failure to meet goals (Festinger 1942). Likewise, people may inflate their aspirations to increase their motivation level (Frank 1941). In our framework, people manipulate their reference points to maintain consistency in their own behavior. Like a surge protector on a computer, the goal of such efforts is to neutralize transient shifts in desire that are caused by sudden increases in proximity. This section outlines three self-control tactics (avoidance, postponement and distraction, and substitution) that reduce desire by undoing reference-point shifts. Each tactic implies a leftward movement in Figure 3.

Avoidance. Clearly, the best way for consumers to avoid time-inconsistent behavior is to eschew situations in which they are likely to experience increases in desire for previously rejected alternatives. Avoidance precludes physical or sensory proximity and, thus, prevents a proximity-induced shift in a reference standard. The importance of avoidance is well-known to those who have given up alcohol or drugs (although there is some controversial clinical evidence that alcoholics and addicts may be able to consume in moderation; Polich, Armor, and Braiker 1981). Recognizing that their resolve could lapse under the wrong circumstances, recovering alcoholics and addicts often

avoid bars and parties where alcohol or drugs are served. Rook and Hoch (1985) found that consumers employed a variety of distancing strategies based on avoidance, such as: "You've got to walk away—as soon as I feel an impulse, I immediately leave the area," and "I steer clear of record stores when I can't afford it." Schifter and Ajzen (1985) found that women were more successful in losing weight when they had developed a fairly detailed plan of action to deal with the unanticipated difficulties of dieting.

Postponement and Distraction. Postponement means putting off a choice until some future date, an effective strategy against transient desires (Fig. 2*b*). Many consumers devise postponement rules, such as: "Never buy a car on the first visit to the dealership," or "Always consult my spouse before making a major purchase." After a consumer leaves the showroom or department store, his or her desires, which had seemed firmly entrenched, often recede. Rook (1987) found that the most difficult moments in an impulsive-buying situation occur immediately after the impulse to consume is first felt. Consumers believed that the intense desire would subside by itself if they could only resist it for a little while. Recognizing that impulsivity may be cultivated by high-pressure sales tactics, numerous states have three- to seven-day cooling-off periods during which a consumer can reconsider and nullify a purchase. Postponement, however, does not work for all people. Nisbett and Kanouse (1968) found that, although there was a positive relation between unplanned impulse buying and number of hours of food deprivation for normal-weight individuals, there was no relation for obese consumers. In fact, obese consumers purchased even more when they had just eaten, suggesting the possibility of an eating-begets-eating mechanism.

Distraction has proved to be one of the most successful means of postponing. Whereas attention to the delayed-goal object increases the pain associated with waiting, distraction reduces the frustration and arousal that accompanies the typical waiting period, effectively reducing the magnitude of the shaded areas in Figure 2. Work by Mischel and his colleagues has demonstrated that self-distraction is an effective way for children to maintain self-imposed delays of desired goal objects (other than avoidance). In two sets of experiments, subjects were instructed to distract themselves while waiting (Mischel and Ebbesen 1970) or to cognitively transform the immediate rewards (e.g., by thinking of the marshmallows as little white clouds; Mischel, Ebbesen, and Zeiss 1972). Both distraction and cognitive transformation increased willingness to wait.

Substitution. Substitution involves offering oneself a small but immediate reward for successfully resisting a larger impulse. For instance, as a snack, a dieter may substitute a piece of celery for the much more satisfying

peanuts or potato chips. The purpose of this tactic is to provide sufficient immediate satisfaction to endure the deprivation associated with waiting, perhaps simultaneously distracting oneself from the original desired object. Low-calorie foods (e.g., light and nonalcoholic beverages and high-fiber breads that fill you up but not out) are positioned as wholesome substitutes for the real thing. Specialty shops and galleries selling expensive antiques or artwork also offer relatively inexpensive baubles and gewgaws that can be purchased to sate desires for more imposing objects.

The effectiveness of substitution is uncertain. Several findings from the delay-of-gratification paradigm suggest that it can backfire (Yates and Mischel 1979). Although substitution may momentarily distract the consumer from the more desirable object, the delayed object may come back into focus. Impatience may intensify when the small reward is no longer available. Moreover a "lesser evil" substitute may not always be an improvement over the focal object of desire, as witnessed by people who continue to smoke in order to avoid weight gain (Klesges et al. 1989).

Willpower

The second factor influencing self-control is willpower. Willpower refers to the diverse tactics that people use to overcome, rather than to reduce, their own impatience. The idea of overcoming desires is inimical to the rational choice perspective, which assumes that people try to satisfy, rather than to overcome, desires. The use of willpower tactics implies the existence of multiple, quasi-independent centers of motivation within individuals (or multiple selves [Elster 1977]). In literature and the fine arts, self-conflict is often portrayed as the soul caught between the devil's imprecations and an angel's moral exhortations. Intrapersonal conflict is a recurring theme in consumers' self-reports of impulse purchases (Rook 1987; Rook and Hoch 1985). To capture the introspective experience of intrapersonal conflict, theoretical frameworks of interpersonal conflict have been used to model the struggle between multiple selves. Game theory, the problem of collective action, and principal agent theory have all been translated into intrapersonal terms.

Schelling (1978) and, more recently, Ainslie (1985) view intrapersonal conflict as a repeated two-person game, an "intimate contest for self-command" (Schelling 1984) between two selves, one myopic and the other farsighted. For example, there is the self (dominant right after smoking a cigarette) who wants to quit smoking and the self who wants "just one more." There is the self who wants to rise early (and sets the alarm clock accordingly) and the self who rejects the previous night's resolve in favor of sleeping in. Willpower, in this context, can be viewed as the efforts of the farsighted self to constrain the behavior of the myopic self. Elster (1977) views intertemporal

choice as a problem of collective action between a sequence of temporally situated selves. In the same way that social equilibrium can unwind as the result of individual defections, impulsive acts by earlier situated selves (e.g., smoking a cigarette) can lead to an ever-expanding series of defections. Thaler and Shefrin (1981) apply a theoretical framework adopted from principal agent theory in economics to understand intrapersonal conflict. In their model, an atemporal, farsighted planner (the principal) attempts to regulate the behavior of temporally situated, shortsighted doers (the agents).

Sjöberg (1980; Sjöberg and Johnson 1978) views willpower as a form of high-quality deliberation requiring cognitive effort. "To have a strong will means being able to stick to an initial well-balanced decision under various forms of pressure" (Sjöberg and Johnson 1978, p. 150). Volitional breakdowns occur under the influence of strong moods or desires, when "some energy which otherwise would have been available for the cognitive system is lost. . . . The withdrawal of energy first affects more sophisticated cognitive mechanisms leaving the more primitive ones. This may leave the door open for a corrupt, twisted, and shortsighted reasoning which generates excuses for changing the initial decision" (p. 151). Sjöberg and Johnson tested their theoretical perspective by repeatedly interviewing smokers who attempted to quit. As predicted, reversion to smoking generally occurred at times of extreme stress; subjects who resumed smoking identified cognitive distortions of reality that occurred prior to resumption of smoking.

In what follows, we classify all of the interpersonal strategies that people can apply intrapersonally under the category of "willpower." People can attempt to regulate their own behavior (by erecting constraints or altering incentives) in the same way that they attempt to regulate others' behavior. Just as individuals may attempt to use reason and argument to persuade another person to adopt their perspective, they may apply analogous persuasion tactics to themselves. Willpower tactics differ from desire-reduction tactics in an important way. Willpower is a force that opposes desire. Pure willpower implies an upward move in the desire-willpower model in Figure 3. Exercise of willpower need not change the level of desire experienced by the individual, although it can decrease, or inadvertently increase, the intensity of a desire in certain cases.

Willpower-based strategies include all attempts by consumers to enumerate and make salient the costs of satisfying time-inconsistent preferences. There are economic costs, based on an assessment of the ability to pay, and psychic costs, such as guilt and regret. We also discuss consumer rationalizations that might undermine the effectiveness of particular willpower strategies.

Precommitment. Precommitment involves any device through which consumers impose constraints on, or alter incentives for, future behavior. A classic example of precommitment was Ulysses' instructions to his crew to bind him to the mast so that he could hear the Sirens without jumping overboard to his death; his crew stuffed wax in their ears so that they could safely sail the boat (Elster 1977). Wiring one's jaw shut as a means of losing weight and taking the drug Antabuse to discourage future drinking are modern examples of precommitment through self-binding, as are the less extreme cases of placing the alarm clock across the room (Schelling 1978) and leaving one's credit cards and checkbook at home when going shopping. "Side bets" (Becker 1960) are also often included in the precommitment category. Side bets are contracts that commit consumers to a course of action in which future rewards are irrevocably tied to the ability to avoid more immediate satisfactions.

Precommitment is usually assumed to operate by brute force. The individual either eliminates the option of consuming or imposes such extreme penalties on impulsive behavior that the costs outstrip the benefits. However, if credible, precommitment may also have an impact through its effect on desire and impatience. Knowing that one will not have the option to consume in the future can reduce desire. For example, addicts suffer less withdrawal pain when detoxifying in an establishment that has a reputation for incorruptibility (Schelling 1984).

Precommitment has received much attention, especially in recent economic analyses of self-control (Elster 1977; Strotz 1956; Thaler and Shefrin 1981). It remains an obvious enigma for the standard time discounting view. Despite the abundance of literature on the subject, the prevalence of precommitment in aiding day-to-day consumer self-control is unclear. Precommitment strategies are often difficult or costly to initiate and are of limited effectiveness. Consumers are adept at constructing easily revocable side bets, inventing rationales for why a current purchase is a valid exception to the rule. Even individual retirement accounts, pensions, and trusts have provisions for early withdrawal.

Economic Cost Assessment. When consumers are asked what types of self-control devices they use to resist impulsive buying, conscious consideration of the purchase's economic costs is often the first tactic mentioned (Rook and Hoch 1985). Self-control based on cost-benefit considerations is not always easy. While desire is proximate and vivid, economic consequences usually are remote and difficult to define (Hirschman 1977). Ten dollars spent now results in a minute decrease in savings, or an insignificant increase in debt, and is quickly lost in the complex flow of income and purchases (Johnson, Kotlikoff, and Samuelson 1987). There is little relation between an isolated expenditure

today and the ability to make a specific purchase in the future; this may be especially true in households where the spender is not the bill payer. Studies of self-help groups for compulsive shoppers (e.g., Spender-Menders; see O'Guinn and Faber 1989) have found that, when making purchases, profligate spenders sometimes relied on a "just-charge-it" logic; apparently, they were able to successfully divorce the pleasures of purchase from the economic realities of payment.

Consumers may make numerous rationalizations (some provided by salespeople who have read personal selling manuals) that sabotage their attempts at rational cost assessment; most notable are feelings of entitlement. Entitlement represents the quintessential Yuppie theme—"you work hard, so you deserve to play hard." As the theme was expressed on a recent bus-stop advertisement for women's designer clothes, "*Being* it all is hard work; *having* it all makes up for it." Splurging is acceptable because a penance has been paid in advance or will be in the near future. The VALS-inspired achiever ads rely on the entitlement theme, as exemplified by a print ad showing two exhausted racquetball players as backdrop to the copy: "He works as hard as he plays. *And* he drinks Johnnie Walker." A recurrent theme in consumers' discussions of why they engage in recreational shopping and impulse buying is that it relieves feelings of depression (Bellenger and Korgaonkar 1980). Entitlement offers the consumer the argument that "you do not deserve to feel miserable; buy it and cheer yourself up." Entitlement sometimes is supplemented with a "greed-is-good" rationale. During the Gilded Age (1860–1900), some social commentators argued that conspicuous consumption offered positive benefits by encouraging self-help behavior in the middle class, a class that was fueled by the social emulation motive (Mason 1981).

Entitlement may provide an even more potent rationalization for purchase when it is coupled with social comparison, which, as mentioned earlier, can create impatience by increasing proximity to the product. The basic argument here is that, not only do you deserve to be compensated for your good deeds or hardships, but, in addition, since "everybody else is doing it," you ought to jump on the bandwagon as well. This attitude would result in a shift toward the bottom right-hand corner of Figure 3*b*. Since the movement is perpendicular to the buy line, such rationalizations may dramatically increase impatience and the propensity for time-inconsistent behavior.

Time Binding. In addition to thinking about the negative consequences of consuming, consumers may also focus on the positive benefits of delay, a tactic known as "time binding" (Jones and Gerard 1967). Freud (1911) believed that the ability to cathect images of desired but delayed gratifications was necessary for

the development of frustration (deprivation) tolerance. Hence, he viewed ideation about delayed rewards as, in effect, a substitution tactic where the intermediate rewards are psychic rather than material.

Time binding and other types of internal reinforcers have been the subject of much study, particularly in developmental research on delay of gratification (see Mischel [1974] for a summary). When waiting for a goal object is involuntary (i.e., an externally imposed delay that cannot be overcome), time binding has been demonstrated to be an effective strategy to reduce frustration (Miller and Karniol 1976). However, when the situation involves a self-imposed delay of gratification (arguably the most common situation in consumer behavior), experimental research overwhelmingly demonstrates that time binding does not work well. Mischel et al. (1972) found that instructing subjects to think about delayed rewards while waiting for them made subjects less willing to delay gratification. An increasing unwillingness to delay gratification is especially likely when delayed-reward objects are similar to immediate-reward objects (e.g., both are consummatory objects; Mischel and Baker 1975).

What accounts for the limited effectiveness of time binding (as opposed to pleasure management, which does seem to be effective)? One reason may be that virtually all delay-of-gratification research has used child subjects, a population with limited, if any, pleasure-management intuition or skills. Another possibility is that, even though focusing on the delayed object makes the benefits associated with waiting more salient, it may also inadvertently increase proximity, which, in turn, activates desire and increases impatience. Thinking about how good dessert will taste to avoid overeating appetizers may actually increase current hunger pangs, thereby increasing the likelihood of time-inconsistent consumption (Ruderman 1986). However, time binding may be more effective in practice than is indicated by empirical research. Time binding has been studied in situations in which subjects have had to react to a desirable stimulus. It may be that time binding does not work as well as a reactive self-control strategy in responding to sudden increases in desire, even though it does work as a proactive form of pleasure management.

Bundling of Costs. Another tactic for increasing the salience of purchase costs is to bundle a series of otherwise isolated actions (Ainslie 1975). Through bundling, impulsive transgressions become inseparable (as in a formal budget); the influence of the transgressions is felt in other areas, such as the postponement of more important and needed purchases. The old adage "calories add up" is an explicit form of bundling. Rather than myopically view the eating of an ice-cream cone as an isolated act, a dieter may attempt to reframe it as the first in an endless string of self-control violations. By bundling eating of the current cone with

eating of future cones, the consumer may view the costs of the cone not as 250 calories, but as an extra 250 calories a day for the foreseeable future, with obesity as the inevitable outcome. To aid consumers in bundling, public-service television ads show piled-up cartons of cigarettes with the yearly cost of smoking pulsing on center-screen. Similarly, the Environmental Protection Agency requires automobile and consumer appliance manufacturers to display a sticker stating average yearly fuel costs. Apparently having these expenses expressed as a lump sum makes them more real and consequential to consumers' future well-being.

It should be noted that actions can be unbundled as well as bundled. Instead of bundling impulsive acts, consumers can just as easily treat such episodes as isolated events, rationalizing their behavior with logic such as "just one won't hurt" or "a little is not that bad for you." Marketers, also, may reframe the economic cost of a purchase into smaller, more palatable units. "Pennies a day" represents one example of such reframing through unbundling. Credit-card brochures that state the cost of maintaining a debit balance as the minimum monthly payment, rather than as the interest cost, similarly focus attention on the small size of payments; these brochures divert attention from the more distant problem of how long the payments will last. Consumers may also attempt to redefine purchases so that they appear time-consistent. Sales promotions can provide a basis for rationalization by raising the specter that it would be shortsighted not to make the purchase. A food firm's recent direct-mail offer shows a large full-color picture of a fancy dessert with the headline, "Would you throw away a *FREE* Dobosh Torte worth \$11.95?" The offer increases desire by shifting the consumer's reference point (i.e., not ordering results in a loss) and also provides a means for rationalizing other catalog purchases. Realtors are well-versed in highlighting the unique characteristics of a house and warning that if one does not make an offer "it may get snapped up."

Higher Authority. Consumers may also invoke higher-order principles, or religious doctrine, in their efforts to resist impulsivity. Appealing to higher authority is similar to cost bundling in that the costs associated with succumbing to a momentary desire are treated as global in nature. Violations that could be considered as nothing more than a single lapse are recast as significant transgressions against one's beliefs and values. Negative consequences cannot be localized. The basis of self-control in the higher-authority situation involves strict adherence to rules and regulations. Any momentary violation, no matter how small in isolation, represents a serious breach.

Higher authorities take a number of forms, both internal and external. The consumer may pray for strength, rely on peer groups, or treat the tempting of self-control as a challenge. When there are no external

authorities available, higher authority can take the form of talking to oneself or related forms of self-reinforcement (Mischel et al. 1972). Relying on higher authority, however, can be a risky strategy. When transgressions occur, as is likely to happen occasionally, instead of continuing to struggle for self-control, individuals may view themselves as lost causes and abandon all further restraint. Research on dieting (Loewe 1982) has found that bingeing behavior is often precipitated by reference to an "already-blown-it" logic.

Regret and Guilt. In addition to the material costs associated with time-inconsistent purchases, there are also psychic costs (O'Guinn and Faber 1989). Research on decision making under uncertainty (e.g., Allais's paradox) has found that people avoid actions that they anticipate regretting (Bell 1982). Consumers may also anticipate future guilt and shame. Impulsive purchase behavior may conflict with basic morals and values, signaling hedonism, materialism, or selfishness (Belk 1982, 1985). Consumers may worry about the conspicuousness (Mason 1981) or fear the embarrassment that may accompany seemingly frivolous purchases. The embarrassment need not be public, as witnessed by consumers' feelings of immaturity when looking into a closet filled with infrequently worn shoes and clothing.

A recent automobile ad, recognizing that guilt can reduce the probability of purchase, offered explicit countervailing arguments. It read, "To anyone who thinks a Mercedes-Benz S-Class is self-indulgent, a brief lesson in self-preservation." A detailed pictorial and verbal enumeration of the product's safety features followed. The ad ended with the tag line, "the only luxury sedan that can offer the luxury of being rated 'the safest car in America' two years running." Finally, in many cases, recognition of future psychic costs may diminish desire in the short run. For example, anticipated regrets about not practicing safe sex may directly decrease one's current desire. Willpower-inducing guilt accompanied by desire-reducing fear may be one of the most effective self-control devices since it moves the consumer away from the buy line (perpendicular toward the upper left-hand corner of Figure 3) as rapidly as possible.

CONCLUSIONS

In this article we have attempted to explain how consumers maintain self-control in the face of time-inconsistent preferences. We have conceptualized consumer self-control as a struggle between the two psychological forces of desire and willpower.

Our desire-willpower model borrows heavily from previous two-factor theories of self-control. However, the model is also unique in several regards. First, using a decision-theoretic analysis of reference points, it provides an explicit mechanism for sudden increases

in desire. Specifically, it shows how a nonproblematic standing desire can turn into one that fosters time-inconsistent behavior. Second, whereas previous two-factor models have tended to lump all self-control attempts into one broad category, we are able to draw clear distinctions between desire-based, willpower-based, and combination strategies. In particular, the model recognizes that self-control is influenced not only by environmental factors that influence proximity and desire but also by the ability of consumers to execute their own desire- and willpower-based strategies.

The desire-willpower framework offers testable predictions concerning time-inconsistency and self-control, many of which are supported by the existing literature. Additional tests of the model could involve increasing desire by using proximity to induce reference-point shifts, and then examining the effects of the different desire- and willpower-based strategies on subjects' ability to delay consumption. Self-control strategies could be provided through explicit instruction. It would also be interesting to investigate the effects of different forms of rationalization on self-control; however, this type of research is not easy to do. Almost all of the work in the delay-of-gratification paradigm (Mischel 1974) has used very young subjects who have not been well socialized to the need for self-control. On the other hand, most adult consumers already have well-developed repertoires of self-control tactics, especially when they are placed in situations in which they know that they are being evaluated. Therefore, adults may not require experimenter instructions to maintain self-control.

It would also be interesting to examine how self-control evolves over a family life cycle in which disposable-income levels and family expenditures are typically negatively correlated. Because of multiple decision makers, the study of self-control would involve both intra- and interpersonal conflict. Savings behavior is another important research application. Saving is the mirror image of consumption. Although it has received plenty of attention from economists, savings behavior has been neglected by consumer researchers (cf. Katona 1975). For reasons that are not understood by economists, the United States currently has one of the lowest savings rates among industrialized countries. Since consumer self-control underlies the national savings rate (Shefrin and Thaler 1988), a better understanding of consumer self-control at the micro level could increase our understanding of saving and its determinants.

Our work also bears on impulse-buying behavior. Although the term "impulse buying" has been around for over forty years, few theoretical or empirical advances have been made. Part of the problem is that people have used a single term, "impulse buying," to refer to a wide range of processes that cause consumers to make unplanned purchases. Global terminology may obscure more than it illuminates. In trying to dis-

tinguish between the different motives for unplanned purchasing, Stern (1962) developed four conceptually distinct categories of impulse buying: reminder, suggestion, planned, and pure. It is clear that not all impulse buying represents time-inconsistent behavior, but time-inconsistency and consumer self-control are closely linked to "truly impulsive buying, the novelty or escape purchases which break the normal buying pattern" (Stern 1962). Our approach is compatible with the narrower focus of Rook (1987, p. 191), who defined impulse buying as occurring "when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately. The impulse to buy is hedonically complex and may stimulate emotional conflict. Also, impulse buying is prone to occur with diminished regard for its consequences." We feel that the best way to make progress in understanding impulse buying is to be specific about the behavior in question. Our framework may help in this regard.

Our economic-psychological model of consumer self-control stands at the intersection of two broad currents in consumer behavior research. One perspective views decision making as rational and dispassionate; the other views it as visceral and emotional. Thus, the desire-willpower framework provides an ideal arena for examining the interaction between rational and hedonic motives. These two types of psychological processes are normally compartmentalized into separate literatures. Although each perspective adequately describes a wide range of consumer behaviors, neither alone can provide an adequate account of the entire decision-making process. Emotional factors are reflected in the reference-point model of deprivation and desire. Cognitive factors are reflected in the deliberation and self-control strategies that consumers utilize. A change in either desire or willpower can cause the consumer to shift over the buy line, resulting in a purchase. Moreover, we have cited numerous cases in which emotions influence cognitive factors (e.g., desire motivating a rationalization of the negative consequences of a purchase) and vice versa (e.g., cost analysis reducing a desire). Although conceptually distinct, the psychological factors of desire and willpower are by no means independent of one another.

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