

CHAPTER 3

**AN OUNCE OF PREVENTION,  
AN APPLE A DAY**

*Effects of Consumers' Lay Theories on  
Health-Related Behaviors*

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Over 300 million people worldwide are obese (WHO 2010), including over 34 percent of the American adult population (Ogden et al. 2007). As these numbers grow ever faster every year and as people correspondingly succumb to health-related problems, the topic of health maintenance has become increasingly important and has begun to attract corresponding attention from consumer researchers (Agrawal, Menon, and Aaker 2007; Chandran and Menon 2004). A major focus of this scholarly attention has been on factors that lead individuals to overindulge in unhealthy behaviors instead of restraining themselves and making healthy choices. These include factors as disparate as social influence (McFerran et al. 2010), regulatory focus (Sengupta and Zhou 2007), and recollections of prior instances of indulgence or restraint (Mukhopadhyay, Sengupta, and Ramanathan 2008). Concomitant with this seemingly diverse set of factors, one area of investigation has demonstrated reliable and strong evidence of influence on health-related behaviors. This is the study of consumers' lay theories. Lay theories, also referred to as naive beliefs or implicit theories, have been shown to influence health-related goal setting and striving (Mukhopadhyay and Johar 2005), perceptions of taste versus healthiness (Raghunathan, Naylor and Hoyer 2006), and even parents' choices of foods for their children (Mukhopadhyay and Yeung 2010). The aim of this chapter is to detail these and other related advances in our understanding of how consumers' lay theories influence their health-related judgments and behaviors.

Lay theories are basic assumptions that ordinary people hold about themselves and their world (Dweck 1996; Wyer 2004). Consumer research has extensively studied lay theories as manifested in decision-making biases (Tversky and Kahneman 1974), expectancy disconfirmation-based product satisfaction (Oliver 1980), and beliefs regarding the association between price and quality (Rao and Monroe 1988). However, till recently, far less attention had been paid to lay theories in

other, more general domains. Prominent among these are lay theories of personality, or “what ordinary men and women believe about the existence and power of individual differences in personality” (Ross and Nisbett 1991). Such lay theories pertain to human attributes such as intelligence or self-control. People acquire these lay theories from a variety of sources, including their everyday experiences (Ross and Nisbett 1991), folk wisdom (Briley, Morris, and Simonson 2000), their environments (Morris, Menon, and Ames 2001), or simply by observing themselves (Bem 1967). Importantly, once acquired, lay theories form an integral part of an individual’s belief system (Wyer 2004) and therefore influence judgments and behavior across many if not most domains of human behavior (Butler 2000). As such, it is perhaps only to be expected that they should exert strong and systematic influences on health-related behaviors as well. The following discussion centers first on the health-related aspects of lay theories of self-control and then broadens to other key lay theories whose influence has been demonstrated in the literature.

### LAY THEORIES OF SELF-CONTROL

Dweck’s program of research (see Dweck 1999 for a comprehensive review) stands as the main body of research on the behavioral effects of lay theories. The key finding in this area is that the impact of failure on subsequent effort depends on children’s lay theories regarding the nature of intelligence. Specifically, “incremental theorists,” those who believe that intelligence and ability are malleable quantities that can be improved through effort, set themselves “learning goals” and treat failure as a challenge by increasing effort. On the other hand, “entity theorists” believe that intelligence and ability are fixed quantities and cannot be changed, set themselves “performance goals,” and react to failure as an indictment of their ability (Dweck and Leggett 1988).

While Dweck’s research concerns itself largely with lay theories of intelligence, a growing body of research examines the behavioral effects of lay theories of self-control in particular. Kivetz and Simonson (2002) found that some people have a lay theory that people in general have “too much” self-control and, if gifted cash, would spend the money on “practical things.” Hence they would prefer to give hedonic items as gifts. More specific to the context of health, Furnham and McDermott (1994) found that people believe that self-control can help overcome issues such as obesity, drug addiction, and marital problems. However, these researchers did not distinguish between people who differ in their beliefs about the nature of self-control itself.

A more systematic analysis of the effect of lay theories of self-control on decisions and behavior was first provided by Mukhopadhyay and Johar (2005), who identified two distinct dimensions of lay theories of self-control. They established first that people might differ not only in terms of how much self-control they themselves have, but also on the amount of self-control they believe people in general have. Such beliefs can range across a continuum from very small (i.e.,

“limited theorists,” who believe that reserves of self-control are inherently limited, as per Muraven and Baumeister 2000), to very large (i.e., “unlimited theorists,” who believe that reserves of self-control are practically unlimited, as per much of Western philosophy, cf. Descartes 1649). This lay theory therefore represents the quantum of self-control that a given individual believes that people have (with the labels “limited” and “unlimited” representing the two extreme ends of the continuum).

A second dimension relevant to such lay theories is whether, analogous to Dweck’s entity versus incremental theorists, people vary on whether they believe that reserves of self-control can be changed over time or not. Those who tend to believe that people can increase (or decrease) their self-control over time are “malleable theorists,” while those leaning toward the inclination that reserves of self-control are fixed for all time are “fixed theorists.” These two conceptually orthogonal dimensions, beliefs regarding the quantum of self-control and its variability over time, lead in combination to four unique lay theories of self-control. Mukhopadhyay and Johar (2005) referred to these four combinations as the Limited-Fixed (small reserves that do not change over time), Limited-Malleable (small reserves that can be increased over time), Unlimited-Fixed (very large reserves that do not change over time), and Unlimited-Malleable (very large reserves that can be increased even further over time) lay theories of self-control.

Mukhopadhyay and Johar studied the effects of these four lay theories of self-control in the naturalistic but underexamined domain of New Year’s resolutions. This popular annual practice closely mimics prototypical goal-directed behavior, offering a setting in which people attempt to choose and then work toward important outcomes that are often related to health. Indeed, the majority of resolutions that participants listed across experiments in this research were related to one of three categories: finances, diet, and exercise. Given this context, three experiments tested the effects of lay theories of self-control. The first two studies investigated the effects of lay theories that are manipulated or measured on setting resolutions, and the third study extended the investigation to assessing the extent of success at these resolutions.

In Study 1, participants in a  $2 \times 2$  between-subjects design read passages from credible sources that either stated that self-control is a limited resource (Muraven and Baumeister 2000) or that it is an unlimited resource (Descartes, quoted in Elster 1979), which is also fixed (or malleable). Following this “Reading Comprehension” survey was a “Motivation Assessment Questionnaire,” that looked completely different from the reading comprehension survey (e.g., a different font) to prevent participants from making any connections between the lay theory manipulation and this measure. Participants were presented with a blank table and asked to list all their current resolutions, in as much detail as possible. Results showed a significant interaction between the Limited-Unlimited and Fixed-Malleable lay theories, such that when lay theories were malleable, unlimited theorists set the highest number of resolutions. Fixed theorists did not show any effect of limited

versus unlimited lay theory on their goal-setting. Moreover, the resolutions set were rated to be equally important across conditions. This finding, that everyone set equally important goals but there was systematic variation in the number of goals set, suggests that participants calibrated their goal setting based on their lay theories. As Mukhopadhyay and Johar explain:

The more individuals believe that they will be able to expend the effort required to achieve a desirable goal, the more likely they are to set themselves that goal. Since each additional goal requires additional effort at the margin, and hence decreasing expectations of success after a point, individuals tend to set only as many goals for the future as they expect to achieve. The belief that self-control is malleable or expandable to an unlimited extent (vs. limited or fixed) should therefore translate into increased expectancies of goal achievement and hence, the setting of more goals. Therefore, individuals who believe that people in general have malleable and unlimited self-control (“Unlimited-malleable theorists”) are likely to set more goals than those who do not believe this to be the case (“Limited-malleable theorists” as well as “Fixed theorists”).

Study 2 provided further evidence for the role of lay theories of self-control by showing that the effects replicate when lay theories are measured rather than manipulated. Moreover, results showed that these lay theories operate outside of awareness. Making them blatantly salient prior to setting goals can reverse the effect, but only for malleable theorists—fixed theorists continued to show no effect of lay theories on number of goals set. Importantly, self-reports of own self-control were assessed in both studies and did not have any effect in either case. This indicates that lay theories of self-control, which pertain to people in general, are distinct from perceptions of one’s own self-control.

The final field experiment extended the investigation to success or failure at goal achievement, manipulating respondents’ lay theories and assessing their impact on New Year’s resolutions in real time. This study was conducted in two phases, with respondents listing their planned resolutions in November and then reporting on their success at keeping these resolutions the following March. Respondents’ lay theories were again manipulated by making them read passages that either stated that self-control is a limited resource or an unlimited resource (but always malleable, since fixed lay theories had been seen to have no effect). Consistent with the previous studies, unlimited theorists (respondents who read the Descartes passage) set more resolutions than limited theorists. The effect of lay theories on success was moderated by respondents’ self-efficacy (Bandura 1997), which, orthogonal to lay theories, is the extent to which one believes that one will be able to reach a given goal. Limited theorists who were also low in self-efficacy reported significantly less success at keeping their resolutions than those in other conditions—evidently goal achievement is jointly determined by the belief that reserves of self-control are low (i.e., the lay theory) in conjunction with the belief that one may be unable to reach a given goal (i.e., self-efficacy).

These studies demonstrated that people hold lay beliefs about the nature of self-

control that can and do have direct and tangible impacts on their goal-setting and striving, even after controlling for important factors such as participants' ratings of own self-control, goal difficulty, and number of goals. In subsequent research, Mukhopadhyay and Johar (2008) investigated the additional effects of prior success or failure on subsequent goal-directed behavior and found that prior performance and lay theories jointly influence goal setting and striving by driving expectancies of subsequent capability. Compared to unlimited theorists, limited theorists are more likely to attribute success at time 1 to factors in their control, causing them to set more goals for time 2, persist longer and anticipate less doubt at achieving these goals, and strategize their goal pursuit more effectively.

From a pragmatic perspective, this research is important because it informs public policy by highlighting the utility of informing (or reminding) consumers about appropriate lay theories of self-control at appropriate points of time. For example, full disclosure about diets, nutritional contents of food, or side effects of medications may not work because they are not processed given motivational or cognitive limitations. However, a more general message about limited self-control, combined appropriately with interventions that boost domain-specific self-efficacy, could be a useful mechanism to prevent lapses of self-control such as overloading on cupcakes or succumbing to that next cigarette. More generally, it may be useful to sensitize consumers to the number of goals they set. Unlimited theorists may be prone to overextending themselves by setting too many goals—making them prioritize and focus their resources may lead to increased success. On the other hand, limited theorists may on occasion sell themselves short by setting too few goals, or goals that are too easy. Recall that goal difficulty was equal across conditions, yet limited theorists, who set fewer goals, were also more successful. It is conceivable that holding this lay theory, they may have left some “money on the table.”

The finding that limited theorists set fewer goals than unlimited theorists is of use to marketers and salespeople who know that their targets are limited theorists (e.g., from a cultural perspective), in tailoring promotional messages accordingly (e.g., “If you only make one resolution this year let this be it” or “The only resolution you need to make”). Managers of health clubs (for instance) could construct inclusive targets rather than breaking each target down into constituent elements (“exercise for one hour” rather than “ten minutes on each of six machines”). Marketers whose customers are limited theorists might also consider increasing self-efficacy, either through supportive messages (e.g., at health clubs, or communications sent by healthful eating clubs, etc.) or through training programs or support systems that aid in consumption (e.g., dietary guides, reminder phone calls, and interventions).

### **Lay Theories and Choices of Products for Children**

The above research investigates effects of lay theories of self-control on one's own goal-setting and striving. However, lay theories can also exert strong effects

on interpersonal behaviors. (This is noteworthy, since lay theories often stem from observations of other people—this proposition implicates an influence in the reverse direction as well.) For instance, Dweck recounts an anecdote of a young child who described his parents' different reactions to his poor performance in class. The child's mother, evidently an incremental theorist, tried to console him by pointing out that he "tried his best." In contrast, his father scolded him for his underachievement and sent him to his room (Dweck 1999, 103). Not only are these two contrasting reactions excellent exemplars of the two lay theories as held by either parent, they are symptomatic of the types of reinforcements that over time lead children to become either incremental or entity theorists themselves.

In a similar vein, Mukhopadhyay and Yeung (2010) study how lay theories of self-control influence the products that people choose for young children, aged between four and six years old. Most parents consider self-control an important component of their children's development. However, when confronted by children's demand for indulgence—chips before dinner, toys advertised on television, candies on the supermarket shelf—parents allow indulgence more often than not. What makes adults give in to such demands? This research demonstrates that parents' lay theories of self-control, whether limited or unlimited and whether fixed or malleable, are key predictive factors in their decisions for children. Although these beliefs pertain to people in general rather than young children in particular, they are inappropriately projected onto children, leading to decisions that are inconsistent with the nurturing of children's self-control.

The basic premise of this research is that when limited-malleable theorists find themselves in situations where they can develop a child's self-control, they are inclined to act in ways that facilitate it. This includes restricting access to fast food and snacks, preferring educational television programs, and choosing gifts that help educate the child rather than give instant gratification. In contrast, unlimited-malleable theorists, who believe that people in general have large stores of self-control, and fixed theorists, who do not believe that the ability to self-control can be improved, do not take such actions to help build a child's self-control. Findings from experiments conducted in three countries (Hong Kong, the United States, and Singapore), across the domains of gift-giving, babysitting, television program preferences, and eating allowances, and in laboratory experiments as well as in the real world support these claims. Field experiments conducted with parents in Hong Kong and Singapore demonstrated that limited-malleable theorists take their children less frequently to fast-food restaurants (3.17 times per month, as opposed to 4.64 for unlimited malleable theorists and 3.52 times for fixed theorists) and give their children unhealthy snack foods less often (8.81 times per week, vs. 10.39 for unlimited-malleable theorists and 10.35 times for fixed theorists). Further, they are more inclined to restrict television viewing for their charges (television viewing being a natural correlate of unhealthy snacking, cf. Wansink 2007), and when they do allow the TV to be switched on, they prefer educational to entertaining television programs. Moreover, when choosing gifts for young children, limited-malleable theorists tend to prefer those offering greater value

in the long term than the short term—for example, they prefer educational board games to entertaining video games. These effects are observed even after accounting for demographic characteristics such as family income, number of working hours for each parent, number of siblings, and domestic help, and relevant psychological characteristics of the parents. Again, accounting for self-reported self-control does not diminish the effects of lay theories.

These results demonstrate that lay theories of self-control have an influence not only on goal-directed behaviors undertaken by and for the self (i.e., self-regulation), but also on decisions made for others. Parents are gatekeepers for their children's consumption, and their decisions have lifelong implications for their children. It is therefore not unreasonable to assume that the problems of obesity and unfitnes in the current day are in large part influenced by the intergenerational transfer of lay theories and associated behaviors. It would be an ambitious undertaking, but probably well justified from the public health perspective, to try to modify parents' lay theories in ways that would benefit their children's consumption. This may be attempted either via mass media or through point-of-sale communications at retail outlets of "vice" products such as fast-food restaurants. Such messages could, for instance, nudge parents toward limited-malleable lay theories by cueing the need to resist temptation, or perhaps sensitize them to their children's burgeoning self-control. Similarly, marketers of "virtue" products (such as healthy snack foods) may well be advised to subtly (but not blatantly) cue limited-malleable lay theories in communications and point of purchase materials.

### **Lay Theories and Temporal Perspectives**

The above discussion has centered on health-related goal setting, striving, and product choice as reflective of such goal-setting and striving. A related question concerns how people plan toward their chosen goals. Mukhopadhyay and Agrawal (2006) studied the optimality of time frames for goal-directed behavior—does it matter whether people set their goals on a weekly basis or a yearly basis? New Year's resolutions are set every year, but should everyone use the same time frames? What time frame is best, for whom, and why? According to this research, individuals who believe that self-control is a small reserve (i.e., limited theorists) are likely to set goals, make plans, and pursue goals with due regard to this consideration of limited resources. Such individuals are more likely to focus on resources and constraints, and construe goals at lower levels. These lower-level construals should then lead to associations of temporal proximity. In contrast, unlimited theorists are less bound by considerations of constraints on their self-control and are hence likely to construe events as temporally distant. Therefore, Mukhopadhyay and Agrawal suggest that because limited theorists are more likely to think in terms of resources when setting goals, they should be more likely to set goals in proximal time frames. In contrast, unlimited theorists are likely to be more comfortable thinking of goals in distal frames and are more likely to set goals having distal time frames.

These propositions were tested in a study in which participants were presented with a one-page “Lifestyle Survey.” The first question asked, “Looking ahead, how often do you plan to exercise?” with the response option given as “\_\_\_\_\_ sessions in the coming \_\_\_\_\_ {choose an appropriate time frame}.” The choice of time frame was the dependent variable of interest. Lay theories of self-control were measured at the end of the questionnaire using two items, as in Mukhopadhyay and Johar (2005), which were averaged to form a composite measure. As expected, there was a significant relationship between lay theories and chosen time frame, such that those who held more limited theories of self-control were more likely to choose shorter time frames. Follow-up analysis demonstrated that limited theorists were significantly more likely than unlimited theorists to choose weekly horizons and correspondingly less likely to choose longer time frames; in contrast, some unlimited theorists scheduled their exercising frequency on an annual basis! These results demonstrate that lay theories of self-control co-occur with preferences for setting proximal versus distal goals.

What does this imply? Mukhopadhyay and Agrawal (2006) then demonstrate across multiple experiments that when a person’s lay theory matches the temporal framing of a health-related goal, the time frame for the goal feels appropriate, and the pursuit of the goal feels efficacious. This compatibility translates into greater value associated with goal-relevant objects and tasks, better planning as evidenced by reduced conflicts in scheduled activities, greater persuasiveness of goal-related communications, and greater interest in and willingness to pay for goal-relevant activities and products. For instance, in one experiment, participants in a  $2 \times 2$  between-subjects design had their lay theories manipulated by reading the same passages described earlier. Returning to the laboratory two months later, they were presented with a booklet titled “Health Focus Assessment Questionnaire,” in which they were asked to list all the health-related activities they planned to take part in during the course of either “the next week” or “a week, one year from now”—a manipulation of temporal focus. They then saw a second booklet, purportedly a brochure for “The Iyengar Yoga Center of Hong Kong.” This booklet contained a passage describing Iyengar Yoga and its benefits. Following the passage, participants responded to measures of attitude to Iyengar Yoga, willingness to pay for an Iyengar Yoga course, and how much the passage made them want to join any exercise program, Iyengar Yoga or otherwise.

Results revealed, as expected, that unlimited theorists valued the given Iyengar yoga program more when in a distant future mind-set rather than a near future mind-set, while limited theorists displayed the opposite pattern. Specifically, unlimited theorists had significantly more positive attitudes when in a distal (vs. proximal) mind-set, reported greater intentions to exercise, and were willing to pay nearly twice as much when in a compatible mindset ( $M_s = \text{HK}\$640.00$  vs.  $\text{HK}\$334.81$ ; approximately eight Hong Kong dollars equal one U.S. dollar). In contrast, limited theorists had significantly less positive attitudes when in a distal (vs. proximal) mind-set, were less likely to want to exercise, and were willing to pay only about



half as much when in a distal mind-set ( $M_s = \text{HK\$}374.40$  vs.  $\text{HK\$}601.43$ ). This demonstrates an immediate detectable effect of lay theory–time frame compatibility and underscores the extent of the sway of lay theories on health-related behaviors, motivations, and cognitions.

## LAY THEORIES IN OTHER DOMAINS

Until this point, the discussion has been limited to lay theories of self-control and their various effects. However, as mentioned, many other lay theories also exist and exert strong and systematic influences on health-related behaviors. The second part of this chapter discusses recent research on the health-related effects of other lay theories, under three heads: lay theories of experiences (specifically, emotions), lay theories that implicate the self (specifically, optimism), and lay theories that pertain to specific characteristics of food products (specifically, the relationship between healthiness and taste).

### Experience-Centric Lay Theories: Emotion Transience

The first category of lay theories in this section involves experiences. Naive beliefs have been shown to affect predictions of dynamic hedonic experiences (Novemsky and Ratner 2003), predicted emotion (Xu and Schwarz 2009), and even how much one is willing to accept or pay in situations implicating the endowment effect (Van Boven, Dunning, and Loewenstein 2000). Loewenstein and Prelec (1993) famously demonstrated that people preferred to schedule unattractive dinners and meetings with unpleasant aunts ahead of fancy dinners and enjoyable afternoons, presumably driven by a belief that the experience of one would influence (or contaminate) the other, and Chan and Mukhopadhyay (2010) find evidence that such beliefs may vary nonlinearly with time and have ironic effects on postconsumption evaluations.

Among these various research domains, most relevant to the context of health are lay theories of emotion transience. Labroo and Mukhopadhyay (2009) demonstrate that these lay theories, the beliefs that emotions are stable versus transient, influence people's tendencies to choose hedonic options (for instance, a choice of a chocolate bar over an apple), depending on their current mood. The basic question in this research is: who is more likely to indulge in order to feel good in the moment even though exerting restraint is beneficial for the long term—a happy person or someone who is unhappy? Are happy or unhappy dieters more likely to indulge and eat a rich cake rather than exert restraint and choose a healthy apple?

Labroo and Mukhopadhyay argue that people strategically manage their actions both to accomplish their long-term interests and to attain immediate pleasures. If they believe they need to take actions to regulate their immediate feelings, they tend to indulge in immediate pleasures. In contrast, if they believe such actions are not required, they act in their long-term interests. The choice of actions between indulging to feel good or acting in one's long-term interest is determined interac-

tively by people's current feelings and their chronic or situationally activated lay theories about the transience of emotion. People who feel good rather than bad are more likely to indulge *if they believe that emotion is fleeting*. This is because people who feel good infer that unless they take actions to feel better, their positive feelings will pass, but people who feel bad infer that actions to feel better are unnecessary because the negative feelings will pass on their own. In contrast, people who feel bad rather than good are more likely to indulge *if they believe that emotion is lasting*. This is because people who feel bad infer that unless they take actions to feel better, the negative feelings will persist, but people who feel good infer that they can act in their long-term interests because actions to preserve their mood are unnecessary.

Labroo and Mukhopadhyay (2009) observed these patterns across six studies featuring multiple manipulations and measurements of both mood and lay theories, and a variety of dependent variables. For instance, in one study, undergraduate students at the University of Chicago were recruited as they entered a local gym. All participants indicated that making healthy food choices was important to them, subsequent to which they were told that they were taking part in a short study on "time perception." The study involved a coloring task that simultaneously served as mood induction and theory manipulation. The cover story instructed participants that the experimenter was interested in peoples' estimates of duration of events and that their task was to color a line drawing presented to them as quickly and carefully as possible and then estimate how much time they took. Depending on the experimental condition, to manipulate mood, participants colored a line drawing of either a smiling face or a frowning face. In the positive-mood condition, participants colored a line drawing of a smiling face (☺), and in the negative-mood condition, participants colored a line drawing of a frowning face (☹). To manipulate transience, participants were provided with a thin-tipped pen or with a thick-tip Sharpie. Essentially, participants with a microtip pen should take longer to color the line drawing; thus, the task would seem less transient to them than participants who used the sharpie. This feeling of transience would be associated with the transience of emotion. As expected, if participants believed that emotion is fleeting, those exposed to positive (vs. negative) faces were more likely to indulge by choosing chocolate. In contrast, if they believed that emotion is lasting, participants exposed to positive (vs. negative) faces were less likely to indulge—they chose the apple. Hence dieters acted in their long-term interests and chose the apple unless they inferred a need to regulate their affect. Similar results were observed in another study, where individual differences in lay theories were measured, rather than situationally induced. Again, happy (vs. unhappy) participants were likely to prefer chocolate more strongly if they believed that emotion is fleeting, and they were less likely to prefer chocolate if they believed that emotion is lasting. These results suggest a different way of tempering indulgence if one knows the current mood of the target at the point when they are making their decision—remind them of stable reasons for their happiness if they are happy, and cue the transience of their feelings if not.

### **Self-Theories: Optimism**

A second category of lay theory concerns beliefs that implicate the self. Particularly pertinent to the present context is the construct of optimism, which essentially functions as a lay belief that outcomes will be positive, good things will happen, and steps required to achieve these outcomes will be easy (Epstein and Meier 1989; Scheier and Carver 1985). For instance, consumers often purchase products that they are unable to use at the time of purchase, hoping that they may be able to do so in the future. Chan, Sengupta, and Mukhopadhyay (2010) demonstrate that under certain conditions, namely particular combinations of cognitive load, imagery, and a focus on process versus outcome, optimists are more likely than pessimists to buy clothes that are presently too small for them. The question then arises: how does the decision whether or not to purchase such smaller-sized clothes influence the subsequent decision to exercise or diet, so that one might wear these clothes? Chan, Mukhopadhyay, and Sengupta (2010) demonstrate the ways in which optimism influences the likelihood of subsequently behaving in ways that enable the usage of the purchase (e.g., exercising or dieting after having bought a pair of jeans that is one size too small).

The key premise here is that the purchase decision increases the salience of the health goal, to which optimists and pessimists respond differently depending on whether they are thinking of the outcome (looking good in the slim jeans) or the process required to achieve that outcome (exercising or dieting). When consumers focus on the outcome, the salience of the health goal leads optimists and pessimists to engage in different coping strategies. This is due to the difference in lay beliefs held by optimists and pessimists—optimists expect to attain the goal, so they are more likely to actively pursue it. As a result, optimists become more committed to the goal and therefore more likely to actively pursue it, leading them to be more likely to diet or exercise. In contrast, pessimists react in a nonadaptive manner by disengagement—they become less likely to engage in goal-congruent, healthy actions (Scheier, Weintraub, and Carver 1986).

A very different pattern emerges when the focus is on the process. Here, the purchase decision itself acts as a signal of progress toward the goal. For optimists, this sense of accomplishment provides a justification to move away from the focal goal (cf. Fishbach and Dhar 2005). Pessimists, because of their generally unfavorable beliefs, do not view the purchase decision as a measure of progress and hence are unaffected by it.

These propositions were supported in several experiments. For example, one experiment used a 2 (focus: outcome vs. process)  $\times$  2 (optimism: optimists vs. pessimists)  $\times$  2 (decision: buy vs. not buy) between-subjects design. Participants first took part in a survey, which included a question about the size of jeans that they could just fit into currently. After a filler task, they participated in a different survey about buying jeans. Thought focus was manipulated by asking participants to make their decisions by visualizing either the end benefits of wearing the jeans

(outcome-focus) or the process they would have to go through in order to be able to fit into the jeans (process-focus). Next, they read the description of the jeans, which were always one size smaller than their current size. They then reported their likelihood of purchasing the jeans, after which they moved on to an ostensibly unrelated study, in which a type of exercise equipment was described. As the key dependent variable, participants were asked about their likelihood of trying out this equipment. Lastly, they filled out a standard optimism scale (Scheier and Carver 1985). As hypothesized, under outcome-focus, optimists were more likely to try the equipment as a consequence of buying (vs. not buying) the jeans, while the predicted negative effect was obtained for pessimists: buying (vs. not buying) the jeans reduced the likelihood of trying the exercise equipment. Under process-focus, on the other hand, optimists displayed a reduced likelihood of trying the exercise equipment after buying (vs. not buying) the jeans, while pessimists were unaffected by their purchase decision. Additional experiments replicate the results using manipulated (rather than measured) optimism and manipulated purchase decision, provide process measures of goal progress and commitment, and demonstrate the moderating effect of goal salience.

Optimism is a lay belief that things will go well. However, among scholars, there is disagreement regarding whether optimism itself is always beneficial or not. One perspective is that optimism helps in goal pursuit (Taylor and Brown 1988), while a counterargument is that it may lead to a false sense of security and accompanying lapses (Weinstein 1980). This research helps reconcile these differences by detailing when and how optimism helps and when it does not. Specifically, when the optimism functions as a belief that outcomes will be positive, prior goal-directed behavior spurs further goal-consistent behaviors. However, when the optimism functions as a belief that the steps taken to achieve a desired outcome will be easy, chances are that the optimist involved will slip up. These propositions have direct and actionable implications for policy-makers interested in ensuring that chosen health goals are indeed pursued with as few lapses as possible. Given a first healthy decision, such as signing up for a diet or buying an exercise cycle, subsequent goal-consistent behavior will be more likely for optimists if they had taken that first step while focused on the final goal, but for pessimists if they had instead been focused on the steps required to achieve that goal.

### **Product-centric Lay Theories: The Unhealthy = Tasty Intuition**

A final category of lay theories relevant to health implicates beliefs about associations between specific attributes of food products, namely, taste and healthiness. Raghunathan, Naylor, and Hoyer (2006) demonstrated that consumers have a lay theory that the less healthy the item is portrayed to be, the better is its taste. They showed that like many lay theories, this theory too is implicitly held and has strong effects on behavior. Specifically, the Unhealthy = Tasty Intuition leads to increased

enjoyment of an item that is perceived to be unhealthy during consumption and increased preference for it in choice tasks when a hedonic goal is salient.

In an experiment conducted during a large dinner party, guests were requested to individually sample each of three food items, purportedly from a new Indian restaurant in town. One was unambiguously described as being healthy, and one correspondingly as unhealthy. The third, target item, was a mango lassi, a drink made by blending mango pulp with yogurt. Half the participants had this item described to them as being “generally considered very healthy,” while the other half had it described as being “generally considered unhealthy.” In line with the lay theory prediction, participants who were told that the mango lassi was unhealthy rated it as being significantly tastier than those who were told that it was healthy. Moreover, this main effect was stronger for those who explicitly believed that taste is inversely correlated with healthiness—further evidence of the power of this lay theory.

## CONCLUSION

The study of the types and impact of lay theories is today at the cutting edge of psychology and consumer research. The research reviewed in this chapter details some important ways in which lay theories, of self-control and others, influence people’s choices on diet and exercise. These findings are a subset of the growing body of work on lay theories, covering those lay theories that are most germane to obesity-related issues. Based on this evidence, it is inarguable that an understanding of lay theories is critical for an understanding of health-related behaviors and the design of interventions promoting healthfulness.

While each of the above studies has specific practical implications as discussed, are there any general principles that might prove useful in practice? One important lesson based on some of the above results is the substantiation of Wyer’s (2004) observation that the effects of lay theories may be evidenced even when lay theories are situationally primed. Hence, while populations may vary in their distributions of any given lay theory, behavior may still be suitably directed if care is taken to institute appropriate priming procedures prior to the decision. The implementation of such procedures is naturally context-specific and may not always be straightforward, but the benefits reaped may be worth the cost incurred. Moreover, the data suggest that certain lay theories, such as limited-malleable theories of self-control, may lead to more healthful behaviors than others (for example, healthier choices for children and greater success in goal achievement when in concert with high self-efficacy). Therefore, coordinated public health campaigns that arise from disparate sources but carry the same message promoting limited-malleable theories may well prove to be superadditive in their effectiveness.

From a theoretical perspective, while the results reported in this chapter are all both robust and important, much still remains to be done. For instance, one limitation is that while the majority of these studies have looked at the incidence of healthy

versus unhealthy choices, and some at the effects over time, an important area that remains underaddressed is the quantity of healthy versus unhealthy behavior—that is, the amounts of overindulgence or persistence at exercise. Moreover, a vast number of other possible lay theories could also conceivably have had concurrent effects. For instance, a possible corollary of a lay theory of self-control is a lay theory of effort—people may be more likely to restrain at one time if they believe it is relatively easy to exert self-control, but they may also be more likely to indulge because the same belief leads them to view future occasions of restraint as no big problem. Clearly, many such lay theories may be at play, and their interrelationships, antecedents, mechanisms, consequences, and superstructure all remain to be explored.

It is important to keep sight of two key points that unify this seeming smorgasbord of lay theories. The first is that lay theories are, in general, beliefs. The fact that beliefs influence behaviors is not new (cf. Ajzen 1985); what the study of lay theories adds is a much more general and inclusive perspective. As Wyer (2004) avers, implicit theories play a very large part both in explaining past events and guiding future behaviors, and a given implicit theory can be applied in many different circumstances. Some of the research reviewed in this chapter bears this point out strongly—for example, lay theories of self-control are seen to influence goal setting, planning, achievement, and even the choices of products for children. From this generalized perspective stems a second key point, one that bears reiteration. This is that lay theories of personality, specifically, are beliefs about how people may vary on a given personality trait. Hence lay theories of personality are conceptually distinct from their referent personality traits and, as found in several of the studies discussed here, have effects that are observable over and above these traits. Indeed, at times their influence on behavior is palpable even when the referent trait itself has no observable effect. In essence, what people believe about other people in the world they inhabit appears to influence their own behaviors even more than how they view themselves. Our personalities are reflected in the choices we make, and the study of lay theories suggests that we are more what we believe than who we think we are.

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