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How Does Choosing Fitness Labeled Food Affect Consumer's Intention to Forgo Exercise

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HOW DOES CHOOSING FITNESS LABELED FOOD AFFECT
CONSUMER'S INTENTION TO FORGO EXERCISE

A Dissertation

by

Mei Han

Submitted to the Graduate School of the
University of Texas Rio Grande Valley
In partial fulfillment of the requirements for the degree of

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December 2020

Major Subject: Business Administration

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December 2020

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ABSTRACT

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As one of the most widely used marketing techniques, the role and effects of food labels have received significant attention from researchers. Different labels have very different influences and implications. This dissertation focuses on a unique persuasive language label: fitness label. This dissertation starts with a discussion on self-regulation mechanisms and research on goals, and their implications on how choosing fitness labeled food affects subsequent intention to forgo exercise.

This dissertation finds that the existence of response conflict in food choice, as well as the magnitude of the response conflict affect consumer's reaction mechanisms, which in turn affect consumer's exercise intention. To be more specific, choosing fitness labeled food vs. choosing non-fitness labeled food does not affect consumer's subsequent exercise decision when response conflict is absent in food choice. When there is a mild response conflict involved in food choice, choosing fitness labeled food vs. choosing non-fitness labeled food decreases normal-weight consumer's intention to forgo subsequent exercise. However, when the severity of response conflict increases to a stronger level, consumers who chose fitness labeled food exhibit higher intention to forgo exercise, this effect is present among all consumers.

Moreover, this dissertation proposes that consumer's self-control significantly and negatively affects intention to forgo exercise. The collective predicting power of self-control and choosing fitness labeled food increases as the severity of response conflict increases.

Furthermore, this dissertation finds that fitness label is able to produce a health halo that makes fitness labeled food seem healthier, yet the health halo is not sufficient to affect consumer's intention to forgo exercise.

This dissertation has three major contributions. First, it introduces response conflict to address some inconsistent findings of previous research about persuasive language labels. It helps to understand consumer's reaction mechanisms when different levels of response conflicts are involved. Second, this dissertation lays a solid theoretical foundation for future studies. It reviews and summarizes relevant theories that can be applied to the area of food label studies, and discusses the applicability of these theories. Finally, this dissertation responds to the ethical concerns about using fitness label as a marketing tool. It shows that the negative effect of fitness label can be very limited.

DEDICATION

I dedicate my dissertation work to my God, my families and my many friends. A significant feeling of gratitude to my God, He took me to the PhD program, which makes my life challenging and incredibly wonderful.

I dedicate this work and my special thanks to my husband Hang Yang, who has encouraged and supported me through all the difficulties that I encountered during my research. He is so smart and capable that he can always help me finding a solution through brainstorming with me.

I dedicate this dissertation to my parents and parents-in-law. I specially want to thank my Mom Xiaohong Peng, who helped me a lot with my housework when I was busy. I also appreciate the support of my baby daughter Irene Yang who is 18-month-old at this moment. Her kiss is the source of my strength.

I also have to thank my many friends and my academic advisor. Although all their names cannot be included in this dissertation, I will always keep their help and support in my heart.

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CHAPTER I

INTRODUCTION

Food label is an important communication medium for marketers and an essential information source for consumers (Tanner et al., 2019). Consumers always rely on food labels to make a choice. No matter it is a federally mandated nutrition label, or a simple “Fat free” claim, these labels on food affect consumers extensively, yet sometimes consumers don’t even recognize the existence of the effects. For instance, consumers tend to believe that “pure strawberry jam” is better than “sweet strawberry jam”; they may associate “organic” with “healthy”; and assume a drink with a food label tastes better than its unlabeled counterparts (Allison and Uhl, 1964; McClure et al., 2004). Consumers are often accustomed to food labels and the label’s corresponding associations that they don’t even give it a thought. However, some food labels may have negative impacts on consumers’ long-term well-being. For instance, Schuldt (2011) find that organic label is able to bias consumers’ calorie evaluation of the organic labeled food, which will in turn reduce their intention to exercise.

A large body of research has already shown that consumers’ judgements of products and their subjective experiences can be affected by food labels (e.g. Shiv et al., 2005; Wegman et al., 2018), however, research on persuasive language labels have observed inconsistent results. For instance, Vadiveloo et al. (2013) observe a negative effect of persuasive language labels on food consumption in their study 1, but the effect is not observed in their study 2. Gravel et al. (2012)

could not find a significant effect of persuasive language label. Koenigstorfer et al. (2013) find a negative effect of persuasive language label. These inconsistent findings significantly impaired the persuasiveness of research about persuasive language labels. Nevertheless, few literatures could provide a sound explanation for the inconsistent results. This dissertation attempts to bridge this gap by discussing the role of response conflicts. This dissertation proposes that different levels of response conflict activate people's different reaction mechanisms. The different reaction mechanisms give rise to the differential influences of food label, Moreover, this dissertation is interested in exploring factors other than consumers' judgements and subjective consumption experience of the food. To be specific, this dissertation looks at how does choosing a fitness labeled food, compared with choosing a non-fitness labeled food, affect consumers' intention to forgo exercise.

In the paragraphs that follow, this dissertation briefly introduces the history, the general impact, and the problem that arises from using food labels. Then the dissertation discusses the research questions that guide this study, and explains reasons why the research questions are worth exploring.

Nowadays food labels are widely used to provide consumers with information and to help marketers branding their food products. For some people, food label is so omnipresent that it seems to be an ever-present practice. Yet it is indeed a rather recent development. The earliest product label probably comes from England around the 1660s, when products were sold unpackaged. The absence of consumer protection regulations provides unethical merchants opportunities to cheat customers, thus some merchants put their identifications on the products in order to differentiate their products, and this becomes the earliest prototype of modern product labels. In 1870 the Averill Chemical Paint Company registered the first trademark in the United

States. In 1906 the Pure Food and Drug Act was passed in the United States, it was the first law that seeks consumer protection by requiring “truth” on labels. The Gould Net Weight Amendment to the 1906 Act passed on 1913 explicitly requires that food package has to be “plainly and conspicuously marked on the outside of the package”. Entering the 20th century, a growing recognition of the prevalence of obesity and chronic disease has resulted in a series of efforts to promote healthy lifestyles, changing the packaging and labeling of food products are among these efforts. According to Boon et al. (2010), the Food and Drug Administration “provided more flexibility in making claims that could be useful in reducing or maintaining body weight or calorie intake”. Fitness label emerged during this period.

To sum up, the original purpose of employing a food label is to facilitate consumers in decision making, and to promote consumers’ healthy lifestyles. A considerable amount of research studies suggests that employing food labels have positive effects on consumers’ dietary intake (Variyam, 2008; Post et al., 2010; Campos et al., 2011). Meanwhile, many researchers notice that consumers tend to form expectations or associations with certain food labels and the associations are able to affect consumers’ response to a food product. For instance, according to a national survey conducted in 2011, consumers may associate the “all natural” label with “no preservatives, perceive such products to have improved taste, improved nutritional value, and improved food safety”, these associations increase the likelihood of their purchase (Dominick et al., 2018), and the amount of money they are willing to pay for the food (Migliore et al., 2018). However, the effect of food labels does not always lead to good responses or healthy behaviors. For instance, Ogden et al., (2017) show that by using the label “snack” versus “meal”, the manipulation makes people consuming more sweet food and calorie. This trend is also present

when the label “healthy” or “organic” is used (Finkelstein & Fishbach, 2010; Chrysochou & Grunert, 2014; Orquin & Scholderer, 2015).

Although the initial purpose of applying food labels is to aid consumers in their food choices, reinforce their nutrition knowledge, and ultimately help them to develop a healthy lifestyle. Yet more and more recent researchers argue that rather than improving consumers’ health conditions, some food labels are causing more health problems, such as obesity among consumers (Roe et al., 1999; Provencher & Herman, 2009; Chernev, 2011; Sütterlin & Siegrist, 2015; Lan et al., 2017). In a more dramatic case, Schuldt & Schwarz (2010) call the use of “organic” food label as an “organic path to obesity”, given that they found consumers are more susceptible to giving up regular exercise after they consume organic labeled (versus regular) food. As a result, concerns had been raised regarding the ethical dimensions of using certain food labels as a marketing technique (Anker et al., 2011).

As marketing is becoming more customer centered at this present time, given the debates on the problems resulted from food labels, it is imperative to answer the question whether certain food labels can raise health issues, and therefore should be discontinued as a marketing technique. Many researchers attempt to answer the question by looking at the effects of various food labels on consumers’ cognitions and health related behaviors, such as dietary intake and post consumption exercise.

Understanding the impact of food labels on exercise intentions is imperative for two reasons. First, as most nutritionists argue, a healthy life is associated with both the food intake and energy output. Although considerable attention has been paid to the impact of food labels on food intake, the effect of food labels on exercise is largely underexplored. Exercise is especially important for developing a healthy lifestyle. This is particularly true for people who are

overweight or obese (Foreyt & Goodrick, 1995). Understanding factors that impact consumers' exercise intention might help with providing effective means to improve consumers' health conditions. Furthermore, understanding how marketing techniques can affect consumers' exercise intention may have important implications for improving consumers' well-being. Many medical practitioners suggest the merits of adopting diet food and regular physical exercise, yet few research studies have discussed the potential conflict between the two, nor have they discussed the mediating role of "response conflict". This dissertation discusses the potential effect of adopting fitness food on regular exercise.

To advance knowledge about potential effects of food labels, this dissertation looks at a specific food label, the fitness label and its effect. To be precise, this dissertation explores what does "fitness label" on food mean from consumers' perspective, and examines possible mechanisms through which choosing fitness labeled food affects consumers' subsequent intention to forgo exercise.

This dissertation chooses to examine fitness label for four reasons. First, the idea of obtaining fitness is becoming an increasingly hot topic for consumers. An ideal figure is held in high regard because it is closely related to health concerns, aesthetic appreciations, and even social and economic status (Dalleck & Kravitz, 2002; Featherstone, 1982; Fredrickson & Roberts, 1997). The notion of pursuing an ideal body weight emerges among children as young as 6 years of age (Dohnt & Tiggemann, 2006). Approximately 64% of US consumers have the inclination to control their weight (Yaemsiri et al., 2011; De Ridder et al., 2014). With the passion for getting fit, consumers are becoming increasingly vulnerable to fitness labeled products.

Second, consumers' enthusiasm for fit figures has also ignited practitioners' interests in releasing products with fitness concepts. Fitness labels are widely used in many categories of food such as snacks, drinks, and breakfast. According to Koenigstorfer et al. (2013), at least 67 products with fitness labels are sold in a mid-sized supermarket. Practitioners spend a significant amount of money to associate their products with fitness with the hope of connoting their ability to improve consumers' body image. Understanding the impacts of fitness labels on consumers' perceptions and behaviors is also a profitable task for practitioners.

Third, fitness label is different from many other previously mentioned food labels such as health label, organic label, or snack label. These labels received debates from researchers because mixed evidence was found on whether consumers would consume more food due to the labels. Even though researchers haven't agreed on the mechanism that explains this phenomenon, they agree that none of these labels implies the need for consumers to control their diets. In contrast, fitness label connotes the need for controlling diets. The original definition of fitness concerns more about the functional capacity of people's body system (Vanhees et al., 2005). However, researchers noticed that the modern media has extensively associated fitness with lean and good appearance achieved through exercise and controlled dieting (Steward, 2000; Deighton-Smith, 2016). Accordingly, fitness label is different from many other food labels in a sense that it implies the need for controlling dieting, this unique characteristic of fitness label makes it a noteworthy subject for this dissertation.

Last but not least, current understanding about theoretical basis of fitness label and its impact is very limited. Koenigstorfer & Baumgartner (2016) is among the few studies that investigate the effects of fitness label on consumers' actual calorie intake and actual calorie expenditure. They find that fitness label has a negative effect on restrained eater's actual calorie

expenditure, but this effect is not present among non-restrained eaters. The current dissertation aims to advance their study by exploring the mechanism of choosing fitness labeled food on consumers' need for exercise. It differs from Koenigstorfer & Baumgartner (2016) in three ways. First and foremost, the most essential difference between this dissertation and studies by Koenigstorfer & Baumgartner (2016) is the research purpose. Koenigstorfer & Baumgartner (2016) innovatively identify a unique characteristic of fitness labeled food, which is its impact on exercise. The purpose of this dissertation is to explore the mechanism behind the phenomenon. Based on goal cognition literature, this dissertation first discusses the essence of the phenomenon, which is how a goal-consistent behavior influences a subsequent goal-consistent behavior. Then, this dissertation reviews related literature; summarizes theories and models that are frequently employed in other research studies to explain the impacts of different persuasive language labels; and uses three studies to identify the mechanism that explains the phenomenon. Second, this dissertation emphasizes the role of response conflict, which was not addressed by Koenigstorfer & Baumgartner (2016). This dissertation examines the role of response conflict by manipulating three different levels of response conflict, and identifies fitness label's differential impacts at different response conflict levels. This is the most important contribution of this dissertation. Third, this dissertation adopts a different methodology. Koenigstorfer & Baumgartner (2016) utilize experiments, while this dissertation uses scenario-based surveys. This design allows participants to view the problem from a third person's perspective, this dissertation aims to capture information that is not captured in the experiments. The scenarios used for this dissertation describe a hypothetical person's food choice between fitness labeled food and regular food. Therefore, food choice here is a result of freewill rather than an imposed condition. This design helps to explore participants' cognitive analysis of the choice.

To guide the research, this dissertation looks at the following research questions:

RQ1: What does “fitness” mean and what does “fitness labeled food” mean to consumers?

RQ2: When there is no response conflict in food choice, how does choosing fitness labeled food vs. choosing non-fitness labeled food affect consumer’s subsequent intention to forgo exercise?

RQ3: When there is a response conflict in food choice, how does choosing fitness labeled food vs. choosing non-fitness labeled food affect consumer’s subsequent intention to forgo exercise?

This dissertation discusses the meaning of fitness, the meaning of fitness label on food, and the possible mechanisms that explain fitness label’s effect consumer’s forgo exercise intention. This dissertation aims to build a conceptual basis for future studies that are interested in exploring food label’s impact on consumer’s behaviors. The remainder of the dissertation is organized as follows. First, the study begins with reviews of literature regarding the effects of food labels on consumers’ behaviors. Second, it summarizes six relevant theories and models that are helpful for explaining the impacts of fitness label. Third, it introduces the concept of response conflict, and discusses the impacts of choosing fitness labeled food under different levels of response conflict. Fourth, in the methodology section, this dissertation uses a preliminary study and four formal studies to examine the impacts of choosing fitness labeled food on intention to forgo exercise under different levels of response conflict. Last, this dissertation provides a general discussion of the results, an explanation of our theoretical and managerial implications, limitations, and future directions.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL BACKGROUND

The purpose of Chapter 2 is to review existing literature in order to develop hypotheses for this dissertation. Chapter 2 is organized as follows. First, Chapter 2 reviews the impact of food labels on consumers. There is a variety of different food labels that have differential impacts on consumers. This dissertation classifies fitness label into persuasive language category, and discusses the impact of persuasive language label on consumers' judgements of food; consumers' subjective experience; and consumers' behavioral responses. Second, this dissertation discusses the theoretical basis of external factor's ability to impact people's exercise intention. This issue is worth discussion because it explains why a food label as an external stimulus, may have the ability to influence people's exercise intention. Third, this dissertation reviews existing literature about the influence of food label on exercise intention, and summarizes six possible theories and models that may explain the impact. Fourth, this dissertation introduces the concept of response conflict, and develops hypotheses based on the six possible theories and models summarized previously.

2.1. Effects of Food Label

There are many different types of food labels. Brown et al. (2018) categorize food labels into nine different groups. These food label groups include: energy content label that displays the

energy content of the food; fat content label that displays the fat content of the food; serving-size label that displays the serving size of the food; traffic light label that uses traffic light symbol to indicate levels of nutrients of food; guideline daily amount label that suggests recommended amounts; nutrition facts label that displays the nutrition content of the food; exercise equivalent label that suggests the amount of exercise needed to practice in order to equal the calories contained in the food; persuasive language label that persuade consumers to purchase; and logo/symbol label. This dissertation examines the effects of fitness label, which pertains to the persuasive language label category. Other examples of persuasive language label include: organic label, green label, diet label, all-natural label, etc.

The effects of persuasive language labels have been discussed extensively. Generally, the effects of persuasive language labels are largely observed in three aspects: consumers' judgements of food; consumers' subjective experience; and consumers' behavioral responses. Many researchers agree that persuasive language labels can significantly affect consumers' judgements of the food. For instance, consumers tend to consider food with persuasive language labels to be healthier, more favorable, contain less calorie content etc. (Freeman & Booth, 2010; Schuldt & Schwarz, 2010; Gravel et al., 2012; Schuldt, 2013; Besson et al., 2019; Schouteten et al., 2019; Besson et al., 2020). It's important to note that these judgements are not formed based on objective information, instead, they came from the "bias" or "halo" resulted from the label itself. Previous research notice that the "halo" can be developed even when people have access to objective information (Nisbett & Wilson, 1977). For example, Ebneter et al. (2013) find that people significantly underestimate the calorie content of low-fat labeled candy even when the caloric information is accessible. Moreover, the extent to which people agree with the value promoted by the persuasive language label significantly increases the likelihood that they will

develop health halos. This is observed in Schuldt (2011), who suggest that people high in pro-environmentalism are more likely to develop health halos when exposed to organic label. This is in opposed to the notion that people with more relevant knowledge are better at conducting systematic evaluations. For instance, rather than being more cautious about the value of organic labels, pro-environmentalists are more likely to generate health and nutrition inferences when the organic label is present; and restrained eaters are more likely to be affected by fitness labels (Schuldt, 2011; Koenigstorfer & Baumgartner, 2016).

Studies about the effect of persuasive language labels on consumers' subjective experience mainly look at the effect on perceived taste. Consumers' taste experience is subjective, and can be affected by many factors such as the information one receives (Litt & Shiv, 2012), the timing of information exposure (Braun-LaTour & LaTour, 2005), external visual and auditory stimuli (Knoflerle & Spence, 2012; Velasco et al., 2014), emotion (Wang & Spence, 2018) and food labels. For instance, Cavanagh et al. (2014) find that products that are branded as healthy or low in calorie are perceived to be tastier. Ebner et al. (2013) find that low-fat labeling can increase taste experience.

Research studying the effects of persuasive language labels on consumers' behavioral response mainly look at consumers' purchasing behavior, food intake and post-consumption exercise. A meta-analysis by Kaur et al. (2017) suggest that food carrying a health-related claim on label are more likely to be chosen by consumers, though this phenomenon is less salient on food that are high in fat and sugar. This result is echoed by a more recent study which shows organic label leads to higher willingness to pay (Schouteten et al., 2019). Regarding the effects on consumers' dietary intake, Brown et al. (2018) systematically review articles examining the effects of nine types of food labels on consumption volume. After screening over 11128 abstracts

and analyzing 32 included articles, they suggest that the food label has varying effects on consumers' dietary intake. Among the four studies that look specifically at persuasive language labels, two studies are found to have no effect on consumers and the other two studies observed a negative effect on dietary intake. These two studies show that consuming persuasive language labeled food leads to consumers' overeating. Regarding consumers' post-consumption exercise, most studies observed a negative effect. They suggest that persuasive language label either reduces consumers' willingness to exercise, or reduces the actual calorie expenditure among those who consumed the labeled food (Schuldt & Schwarz, 2010; Koenigstorfer & Baumgartner, 2016; Rodrigues & Garrido, 2016). Some researchers notice that the effects of persuasive language label on consumers' behavioral responses may vary according to consumers' restrained eating habits (Cavanagh et al., 2014; Koenigstorfer & Baumgartner, 2016) and personal values (Schuldt, 2011).

2.2. Exercise Intention

Factors influencing people's intention to exercise have been widely explored by a large amount of studies. For instance, researchers found that demographic factors (Egli et al., 2011; Josefsson et al., 2017; Pelssers et al., 2017); descriptive norms (Esposito et al., 2016); performance evaluation (Kwan et al., 2018); satisfaction (Schneider & Kwan, 2013; Sylvester et al., 2018); media (Ritland & Rodriguez, 2014) and many other internal and external factors can affect people's exercise intention. Hence, an important question is what is the theoretical basis of the phenomenon that exercise intention can be affected by external factors?

Researchers tend to rely on the theory of planned behavior (Ajzen, 1991) and the self-determination theory (Deci & Ryan, 1980) to explain exercise intention. Research that apply the

theory of planned behavior suggest that a person's exercise intention is planned, it is determined by the person's instrumental attitude (the utility of exercise), affective attitude (enjoyment of exercise), perceived capability (the ability to exercise), perceived opportunity (time and access to exercise), and influence from significant others (Kerner & Grossman, 2001; Spink et al., 2012; Sas-Nowosielski & Nowicka, 2018; Rhodes et al., 2019; Lee & Lee, 2020). Accordingly, people's exercise intention is determined by their affective and cognitive evaluations of exercise. People's affection can be easily influenced by external stimuli, while their cognitive evaluation is determined by their personal experience and available information.

Self-determination theory proposes that people have many different types of motives. One extreme is the intrinsic motive, which refers to doing things for its own sake and not affected by social-environmental conditions. The other extreme is the extrinsic motive, which refers to doing things in order to achieve a goal, it is largely affected by social-environmental conditions (Guay et al., 2003). The motives in the middle represent the degree to which an extrinsic motive is internalized by people, this is also referred as the different levels of self-determination. People with the highest level of intrinsic motive are self-determined, their behaviors, including exercise behaviors are less likely to be influenced by external environment, and are largely determined by themselves. Research that is based on self-determination theory try to explain how different types of exercise motives affect exercise intention (e.g. Wilson et al., 2003; Gonzalez-Cutre & Sicilia, 2012; Stanley et al., 2012; Giacobbi Jr et al., 2014; Shim et al., 2017; Rodrigues et al., 2020). Among the motives that affect exercise intention, health-orientation motivation and achievement motivation received the most attention.

To sum up, a person's exercise routine is mainly planned rather than spontaneous. People's intention to exercise is determined by their affective and cognitive evaluation of

exercise, as well as their level of self-determination. External factors can influence people's exercise intention when they can inspire people's affection or provide valid information. The higher a person's the level of self-determination is, the less likely for him/her to be affected by external factors.

2.3. Theories Helping to Understand the Effects of Choosing

Fitness Labeled Food on Exercise Intention

Researchers suggest that people's choices are not isolated, instead, an initial choice can affect a subsequent choice (Khan & Dhar, 2006). The effect of choosing fitness labeled food on post-consumption intention to forgo exercise pertains to this research area. Choosing fitness labeled food is a behavior consistent with a long-term health or fitness goal; and exercise is also a behavior consistent with a long-term health or fitness goal. Therefore, the question becomes whether an initial goal-consistent behavior enhances or impedes a subsequent goal-consistent behavior. There are many theories and models available for explaining and predicting this question. This dissertation will review some of the theories and models that are frequently cited to explain the effects of an initial goal-consistent behavior on a subsequent goal-consistent behavior in the context of food consumption and exercise.

2.3.1. The Ego-strength Model of Self-regulation

The ego-strength model of self-regulation or the depletion theory is proposed by Baumeister et al. (1998), and it is one of the most prominent theories in explaining the phenomenon of self-regulation failures. The theory suggests that one's ability to execute self-control or self-regulation relies on limited supply of psychological and cognitive resources. As a

result, any self-regulation attempts that deplete the resource will reduce the strength of self-regulation in the subsequent attempt. In other words, after a successful self-regulation practice (suppressing a desire to perform a goal-consistent behavior), a self-regulation failure is more likely to happen. This theory has been applied in over 200 experiments to explain various self-regulation behaviors (Carter et al., 2015). For example, Vohs & Heatherton (2000) find that performing self-control during an initial task led to difficulties in performing self-control during a subsequent task, and this phenomenon occurred only when self-control was required in the first task. Muraven et al. (2002) suggest that the depletion theory can be applied to explain health related behaviors such as alcohol abuse. They find that male social drinkers may consume more alcohol in situations when demand is restrained. Similar effect is also present in dietary disinhibition and impulsive eating. Kahan et al. (2003) find that restrained eaters who exerted self-control ate significantly more than did restrained eaters who didn't exert self-control. Similar finding is also supported by Hofmann et al., (2007). Trait self-control and self-regulation resources interact to moderate the effect of self-control depletion on food consumption (Wang et al., 2015). Regular practice of self-control tasks may improve self-control capacity (Muraven, 2020).

Depletion theory suggests that the depletion of self-regulation resources explains why a goal-consistent behavior is more likely to lead to a goal-inconsistent behavior. In the case of choosing fitness labeled food and making an exercise decision, according to the depletion theory, whether choosing fitness labeled food lead to reduced physical activity is determined by the self-regulation resource consumed by choosing fitness labeled food. Self-regulation resource is consumed when people suppress their desires and choose an alternative option that does not satisfy their desires. In other words, there is a conflict exists between people's desires and some

long-term goals, in order to achieve the long-term goal, people have to suppress their desires. Since suppressing desires depletes the self-regulation resource, people will exhibit a behavior that is inconsistent with the long-term goal in order to satisfy the suppressed desire in the previous decision setting. In the context of the depletion theory, the question of this study becomes whether there is a conflict exists between choosing fitness labeled food and satisfying a desire. We will discuss this question in details in section 2.4.

2.3.2. Cognitive Control Theory

Cognitive control theory is proposed by neuroscientists. It starts with the concept of response conflict. Response conflict refers to the simultaneous activation of alternative yet incompatible responses (Dewitte et al., 2009). For instance, choosing to purchase a luxury vacuum automatically activates the alternative of purchasing an affordable vacuum to save money. The cognitive control theory suggests that there exists a conflict monitoring system, it detects and evaluates current levels of response conflict, passes the information to the control centers, translates the occurrence of conflict into compensatory adjustments in control, and triggers the control centers to adjust the strength of their influence on processing. The process to “configure itself for the performance of specific tasks through appropriate adjustments in perceptual selection, response biasing, and the on-line maintenance of contextual information” is called cognitive control (Botvinick et al., 2001). For instance, when people see the word “red” in color green, and are asked to name the color, the mismatch between the word “red” and color green results in a response conflict. People’s conflict monitoring system automatically detects and evaluates the level of response conflict, and the control centers adjust people’s sensitivity to

the word and sensitivity to the color so that people can accurately name the color and gradually reduce their reaction time.

Dewitte et al. (2009) suggest that similar response conflicts result in similar control processes. As a result, when people encounter two consecutive and similar response conflicts, the control process tends to linger after adjusting the first response conflict. Therefore, when people encounter the second response conflict, the cognitive control system will be able to interfere immediately, and will enhance the self-regulation performance at the second task in comparison with the previous condition that doesn't involve a prior self-regulation task. However, when people encounter two consecutive yet different response conflicts, since the control system has been recruited in the first self-regulation task, and cannot be adapted to the second self-regulation task swiftly, as a result, the cognitive control system cannot facilitate the performance of the second self-regulation task when different response conflicts are involved.

Sometimes researchers like to compare the cognitive control theory with the depletion theory (Dewitte et al., 2009), because both the cognitive control theory and the depletion theory account for ego depletion, and when people encounter two consecutive yet different self-regulation decisions, both theories predict the same result.

2.3.3. The Halo Effect

The halo effect was first proposed by psychologists who find that when people believe a person has a central quality such as being a warm person or looks attractive, people may unconsciously believe that the person also possesses other positive attributes such as generosity, high intelligence etc. (Asch, 1946; Dion et al., 1972). This bias is referred to as halo, and it also exists in the area of consumer behavior study. Researchers notice that when consumers have a

favorable impression about a product, they would assume that the product also has other good attributes (Thorndike, 1920). For instance, consumers tend to assume that organic food is low in calorie (Schuldt, 2011). Roe et al. (1999) find that consumers are more likely to rely the health claim on the package rather than on the nutrition information to form inferences about a food product, and they form more positive judgements of the product merely because of the presence of the health claim. In another example, Lee et al. (2013) find that the presence of an organic label significantly reduces consumers' calorie estimation, increases willingness to pay, and increases nutritious perceptions. Such a halo effect is also present when low fat label (Ebnetter et al., 2013), health claim (Chandon & Wansink, 2007), social claim label (Schuldt et al., 2012), organic label (Lee et al., 2013), fruit label (Sütterlin & Siegrist, 2015), all-natural label (Amos et al., 2019) are used on food products. The halo effect produces a positive feeling from consuming the product. Some consumers may even consider eating the product as a substitute to exercise, they gained enough feeling of being healthy and achievement that they are meant to get from exercise. As a result, researchers suggest that the halo effect can lead to consumers' physical inactivity (Schuldt & Schwarz, 2010).

2.3.4. The Licensing Effect

The self-licensing effect stems from the theories of goals and self-regulation, it is another widely cited approach to explain why people engage in unhealthy, discrepant behaviors (Huberts et al., 2011). The self-licensing effect is based on the rationale that consumers are constantly facing conflicting goals, they either execute self-regulation to pursue the long-term goals such as saving money and being healthy, or license themselves to pursue the short-term gratification (Fishbach & Dhar, 2005; Chen, 2016). The licensing effect happens when people try to resolve a

conflict between a short-term “want” and a long-term “should” by looking for reasons to justify an indulgent choice (Prinsen et al., 2018). For example, Khan & Dhar (2006) find that purchasing luxury goods becomes more justifiable if the consumer had previously engaged in charity behaviors. This is because the engagement in charity behaviors establishes a positive self-concept that balances off the guilt feeling resulted from purchasing luxury products.

Both the licensing effect and the halo effect are frequently used to explain the negative effects of persuasive language labels, and the licensing effect differs from the halo effect in the following ways. First, the functioning mechanism is different. The halo effect allows people to indulge by producing a positive feeling through consuming persuasive language labeled food; whereas the licensing effect liberates people to choose an indulgent option by reducing the guilt associated with the indulgent option. And guilt is reduced by making effort towards the long-term goal. Second, the condition for the effect to take place is different. The halo effect takes place when people consume the food, regardless of people’s intention. Whereas in the licensing effect, people’s intention plays a vital role. Their behaviors must be driven by their free will, and the behavior should have enough strength to justify their subsequent indulgent choice. People’s conscious to relate a previous behavior and the subsequent indulgent option is a prerequisite for the licensing effect to take place (Mukhopadhyay & Johar, 2009).

Table 1 provides a sample of previous literature that explore the self-licensing effect. From previous literature, it is noticed that consumers usually use enhanced self-attributes, goal-fulfillment, or perceived effort to license themselves to adopt an indulgent option. In all these studies, consumers made efforts to achieve the long-term goal in their first choices.

Table 1

Sample Studies Exploring the Self-licensing Effect

Justification from initial behavior or choice	Effect	Citation
Enhanced self-attributes	More hedonic purchase	Khan & Dhar (2006)
Enhanced self-attributes	Less altruism and dishonest	Mazar & Zhong (2010)
Enhanced self-attributes	Less altruism	Kouchaki & Jami (2018)
Enhanced self-attributes	More hedonic purchase	Jeong & Koo (2015)
Enhanced self-attributes	Less altruism	Conway et al. (2012)
Goal-fulfillment	Indulgent food choice	Chen (2016)
Goal-fulfillment	Indulgent food choice	Wilcos et al. (2009)
Perceived effort	More hedonic purchase	Kivetz & Simonson (2002)
Perceived effort	Indulgent food choice	Fishbach & Dhar (2005)
Perceived effort	More hedonic purchase	Septianto (2017)
Perceived effort	Hedonic eating	Huberts et al. (2011)

2.3.5. The Behavioral Priming Effect

Social psychologists suggest that exposure to related words, environmental cues, social influences or even mental construct of social influences can activate knowledge structures that affect one's behavior (Bargh et al., 1996; Shah, 2003; Wryobeck & Chen, 2003; Fitzsimons et al., 2008). For example, Bargh et al. (1996) find that people exhibited more interruption behaviors when the word rudeness was primed. Many mechanisms can explain this behavioral priming effect. Some researchers suggest that this behavioral priming process is purely passive and happens unconsciously, participants exposed to the priming effect are unaware of the activation of the effect (Shah, 2003). For instance, van Kleef et al. (2011) find that people unconsciously reduced food intake after viewed exercise and fitness commercials. Some other researchers propose that the priming process is purely goal-driven, the effect takes place only when people's goals are activated. For instance, Aarts & Dijksterhuis (2003) find that when participants were exposed to a picture of a library, those with the goal to visit a library responded faster to silence words, and talked less loudly. This effect is not present among participants who

did not have the goal to visit a library. Many researchers also suggest that the behavioral priming process involves both cognition and motivation (Smeesters et al., 2003; Fitzsimons et al., 2008). For instance, Papies & Hamstra (2010) find that environmental cues that prime the goal of getting a slim figure enhance restrained eaters' self-regulation, but the environmental cues did not affect unrestrained eaters.

Regardless of the specific mechanism that explains the behavioral priming effect, many researchers suggest that environmental cues are capable of shifting people's attention to cue-related goals. For instance, by investigating the effects of environmental cues on the self-regulation of eating and smoking, Mann & Ward (2007) show that environmental cues significantly affect attentional focus, which in turn, affects people's health relevant behavior. Goals can be activated not only by goal-consistent cues, but also by goal-inconsistent cues. For example, Fishbach et al. (2003) find that temptations such as fattening food can also promote goal-consistent behaviors.

Fitness labels are able to provide an environmental cue that primes a fitness goal. According to the behavioral priming literature, fitness label has the potential to trigger behavioral priming effect. Fitness labels such as "nestle fitness cereal", "fitbar", "golean", "slimfast" etc. activate people's goals to get fit. Unlike the organic label or other health labels that inform the production process and possible relationship between a food substance and healthy-related conditions (Prada et al., 2016), a fitness label explicitly relates to exercise and the end-state of exercise, which is being fit. This is a unique characteristic of fitness labels. Van Osselaer & Janiszewski (2012) suggest that people's behaviors are largely influenced by their activated goals. Any activated goals people possess at this point will largely affect their exercise intention, and the importance or the value of the activated goal significantly increase the magnitude of

impact on people's behaviors. This is evidenced in a meta-analysis by Weingarten et al. (2016), who show us that goal-related words can significantly impact participants' behaviors, and the more important the outcomes associated with the goal, the more significant the impact is. Fitness label's potential to trigger the behavioral priming effect is also suggested by Wryobeck & Chen (2003), they find that when exposed to words that activate goals of getting fit or active, participants become more likely to engage in exercises. In sum, the fitness label has the potential to activate consumers' goal of getting fit.

2.3.6. Research about Goal Commitment and Goal Progress (hereafter: Goal Research)

Researchers generally agree that people's thoughts, feelings, decisions and actions are affected by both the external forces and internal self-regulation system. Self-regulation system exercise control over people's thoughts and actions through a series of psychological processes. Many self-regulation theories are available to explain different psychological processes and their impacts (Bandura, 1991; Kuhl, 1991; Koch & Nafziger, 2011), yet at the heart of these theories lies the construct of goals. Goals are essential for self-regulation system because they provide motivations for our choices and actions, they also function as a yardstick for self-monitoring and self-evaluation, which enable people to react differently according to their levels of goal fulfillment.

Researchers agree that setting goals can promote more goal-consistent behaviors. Yet Soman & Cheema (2004) found that this is not always the case. They observe a deteriorating impact on subsequent behavior if participants violate their goals in an earlier behavior. Inspired by this finding, Fishbach & Dhar (2005) suggest that goals can be represented by goal commitment and goal progress. Goal progress emphasizes efforts that have been done towards

achieving a specific goal. While goal commitment is a continuous variable that focuses on the strength of a goal. Consumers with multiple goals need to rely on either goal progress or goal commitment to make a choice. When consumers place more weight on goal commitment, it is more likely for them to make a choice that is consistent with that goal. When consumers place more weight on the progress they have achieved, it is more likely for them to make a choice that is inconsistent with that goal. Furthermore, a same action can both signal goal commitment and goal progress, which explains the occurrence of inconsistent behaviors induced by the same goal.

Goal research about goal commitment and goal progress explains the opposite predictions generated by the licensing effect and the behavioral priming effect. A behavior is able to highlight a goal commitment, and signal a goal progress, therefore, whether people will be more goal-consistent or goal-inconsistent is determined by their focus on either the commitment or the progress. Goal research integrates both the licensing effect and the behavioral priming effect, it considers the conditions when fitness label signals a progress (effort) and primes a commitment (activated goal). Therefore, the remainder of this dissertation will not discuss the licensing effect and the behavioral priming effect any more. It will only discuss goal research about commitment and progress.

2.4. Formulation of Hypotheses

As explained in section 2.3., the question of how does choosing fitness labeled food affect intention to forgo exercise is essentially the question of how does a goal-consistent behavior affect subsequent goal-inconsistent intention. Every goal-consistent decision fall in one of the three categories: easy decision; moderate decision, and hard decision. It is the level of dilemma encountered at the decision stage determines the difficulty of the decision. This

dissertation uses response conflict to refer to the dilemma. This dissertation suggests that different levels of response conflict will activate people's differential reaction mechanisms to their choices. The following sections will discuss the role of response conflict, and three levels of response conflict: 1) when there is no response conflict in food choice; 2) when there is a mild response conflict involved in food choice; and 3) when there is a strong response conflict involved in food choice. The dissertation will discuss people's differential reaction mechanisms under each level of response conflict. Hypotheses are developed separately for each different level of response conflict.

2.4.1. The Role of Response Conflict at Food Choice Stage

According to previous analysis of existing literature, response conflict occurs when a decision involves alternative yet incompatible responses. The presence of response conflict in initial decision setting (choosing fitness labeled vs. non-fitness labeled food) is essential in influencing people's subsequent decision (forgo exercise decision). Here lies an assumption that the second decision setting involves a response conflict, because when response conflict is absent in the second decision setting, people's only desire is to achieve a goal. As a result, the previous decision will not influence the second decision, instead, the goal will determine people's choice in the second decision setting (Van Osselaer & Janiszewski, 2012). Generally, most people have conflicting goals to rest and to get fit. Therefore, exercise decision involves a response conflict for most people. The presence of a response conflict in exercise decision makes our research question worth exploring.

Now the vital question is whether the food choice stage involves a response conflict or not? To discuss this question, it is necessary to consider three possible situations: when choosing fitness labeled food vs. non-fitness labeled food does not involve any response conflicts; when

choosing fitness labeled food vs. non-fitness labeled food involves mild response conflicts; and when choosing fitness labeled food vs. non-fitness labeled food involves strong response conflicts. Each of the three situations is explained by a different mechanism according to previously summarized theories and models, and therefore produces a different set of hypotheses.

2.4.2. When Response Conflict is Not Involved in Food Choice

2.4.2.1. Condition When Response Conflict is Not Involved in Food Choice

First, examine the condition when response conflict is not involved. Before any analysis, it is necessary to discuss whether it is possible that the behavior does not involve any response conflicts. As introduced earlier, Dewitte et al. (2009) define response conflict as the simultaneous activation of alternative yet incompatible response. In other words, response conflict occurs when the achievement of one goal requires the sacrifice of another goal. Accordingly, response conflict does not exist when two choices are essentially the same. Assume that consumers do not have product information or do not see product information while purchasing, which is possible because many consumers do not pay attention to product information at all (Nisbett & Wilson, 1977), then for consumers, the subjective difference between the fitness labeled food and regular food is the food label, therefore, it is possible that a response conflict is not involved in food choice.

2.4.2.2. Prediction of Each Theory

Theories and their corresponding predictions are demonstrated in Table 2. Detailed explanations of each theory are presented below the table.

Table 2

Theories and Predictions When There is no Response Conflict

Theory	Prediction
1. Ego-strength Model of Self-regulation	There is not a decrease in self-regulation resource. People's self-control reduces forgo exercise intention.
2. Cognitive Control Theory	The cognitive control system is not activated in the food choice stage. People's self control can reduce forgo exercise decision.
3. Halo Effect	Choosing fitness labeled food increases forgo exercise intention due to the health halo produced by fitness label.
4. Goals Research	Cannot predict people's decision.

According to the depletion theory, people do not consume self-regulation resource when they do not exert self-control, and their ability to exert self-control will not be impaired when self-regulation resource is not depleted. Since self-control involves managing conflicts (Mann & Ward, 2007), people will not exert self-control when there is no response conflict. As a result, when response conflict is not involved at the food choice stage, choosing fitness labeled food will not influence people’s subsequent intention to forgo exercise by depleting their self-regulation resource. And people should have enough self-regulation resource to inhibit their desire to forgo regular exercise regardless of the food they consumed earlier.

Similar prediction can be generated using the cognitive control theory. People’s cognitive control system will be activated only when there is a response conflict. Therefore, people’s cognitive control system will not be activated during food choice stage. The activated cognitive control system may assist people’s exercise decision making, and people’s reaction to the exercise decision will not be impeded by any existing control process. In other words, people’s self-control capability can help them to exert goal-consistent behaviors in making exercise decisions. This is not to conclude that it is people’s food choice that enhances their exercise

intention, but to suggest that at this point, people's exercise decision can be enhanced by their own cognitive control system.

The halo effect predicts a positive effect on intention to forgo exercise. The halo effect suggests that persuasive language label produces a positive halo that bias people's judgements. The biased judgements mislead people to assume the food possess attributes that they actually do not possess, and make people believe eating the food can substitute exercise. According to halo effect, eating fitness labeled food is good enough to substitute regular exercise. Therefore, people should be more willing to forgo exercise after consuming fitness labeled food.

The goal research suggests that people's behavior is driven by their goal commitment or their goal progress. If they focus more on their commitment, a goal-consistent behavior is more likely to happen. If they focus more on their progress, a goal-inconsistent behavior is more likely to happen. When response conflict is absent, the two food choices are essentially the same. As a result, choosing fitness labeled food can both highlight goal commitment and signal goal progress. Therefore, it is impossible to predict people's subsequent behavior through goal commitment and goal progress according to goal research.

2.4.2.3. Hypothesis Formulation

To sum up, according to existing theories, when response conflict is not involved in food choice, the depletion theory suggests that choosing fitness labeled food doesn't deplete self-control resource, so that people should have enough self-control resource to continue their regular exercise regardless of the food they consumed earlier. The theory of cognitive control suggests that people's control system should be able to function when deciding whether or not to engage in exercise, regardless of the previous food choice. The halo effect suggests that choosing

fitness labeled food should impair people's subsequent intention to exercise due to the health halo produced by fitness label. The goal research does not make a prediction. Therefore, we hypothesize that,

H₁: when response conflict is not involved in food choice, choosing fitness labeled food has stronger positive effect on consumer's intention to forgo exercise than choosing non-fitness labeled food.

Study 1 will be used to examine H₁.

2.4.3. When A Mild Response Conflict is Involved in Food Choice

When choosing between a fitness labeled food and a non-fitness labeled food involves a response conflict, regardless of the strengths of the conflict, how does choosing fitness labeled food influence forgo exercise intention becomes a question of how exerting self-control in an initial task influences self-control performance in a subsequent task. In order for a response conflict being generated, choosing fitness labeled food or choosing non-fitness labeled food must be two distinctive options. This distinction leads to the situation that both options have pros and cons. Yet consumers decide to accept the cons of fitness labeled food and give up the pros of non-fitness labeled food; thus, ending up with choosing the fitness labeled food in order to gain fitness. This process involves both response conflicts and self-control.

2.4.3.1. Possible Factors Lead to Response Conflicts in Food Choice

Before we proceed to discuss the possible effect of food choice on forgo exercise intention, an essential question to ask is what factors can lead to a mild response conflict in food choice. This dissertation suggests the belief that fitness labeled food can promote fitness, and the

perceived unpleasant taste associated with fitness labeled food are factors that may lead to a response conflict, because these two factors make the fitness labeled food both desirable (good for fitness) and undesirable (unpleasant taste).

As explained earlier, researchers notice that consumers may associate unpleasant taste with food that seems “healthy”. There are at least four reasons explaining why perceived unpleasant taste can lead to a response conflict. First, perceived taste is the most important factor that impacts consumers’ food purchase. This is evidenced in many research studies (Horgen & Brownell, 2002; Lalor et al., 2011; Miklavec et al., 2015), who found that taste determines consumers’ food selection. Moreover, in Boh et al. (2016), participants indicated that they ate to experience taste and enjoy food. For that reason, taste is able to generate a huge difference among different food options. Suppressing one’s desire to choose an unpleasant taste food in order to obtain fitness involves response conflict and requires self-control.

Second, food taste is not an objective attribute, instead, it is a subjective evaluation. On the other hand, perceived taste can be affected by many external factors. It has been evidenced that besides gustatory, olfactory, and oral–somatosensory cues, visual cues and even intuition from certain texts can also influence perceived taste (Spence et al., 2010; Woods et al., 2011). For instance, Orquin & Scholderer (2015) found that implied health cues such as health related pictures have negative effects on perceived taste. This finding is consistent with the so called “unhealthy= tasty intuition” proposed by Raghunathan et al. (2006). Some researchers noticed that fitness or healthy food are typically perceived as tasting bad (Chrysochou & Grunert, 2014; Orquin & Scholderer, 2015; Mai & Hoffmann, 2015). Accordingly, fitness labeled food might be associated with bad taste, which produces a response conflict when people decide to purchase it.

Moreover, the impacted perceived taste can further influence how the taste is subsequently experienced (Spence et al., 2010; Woods et al., 2011). Researchers found that sometimes people's taste experience is determined by their perceived taste rather than the actual taste of the food (Piqueras-Fiszman & Spence, 2015; Woods et al., 2010). For instance, Nitschke et al. (2006) found that when participants were told that their drink was only mild bitter when it was actually intensely bitter, participants reported that the drink was less bitter than they actually were. This is to say that our prediction about the taste can influence our actual taste experience. Therefore, perceived taste of fitness labeled food may further intensify the response conflict it produced.

Lastly, taste perception can encourage people to engage in heuristic processing of information (Van Koningsbruggen et al., 2011), which primes people's immediate enjoyment goal (Laan et al., 2017), the immediate enjoyment goal has a direct conflict with the distant fitness goal primed by fitness labeled food.

2.4.3.2. Prediction of Each Theory

When a mild response conflict is involved in food choice, Theories and their corresponding predictions are demonstrated in Table 3.

Table 3

Theories and Predictions When There is a Mild Response Conflict

Theory	Prediction
1. Ego-strength Model of Self-regulation	There is a decrease in self-regulation resource among people who chose fitness labeled food. People have enough self-regulation resource in the exercise decision stage. Self-control reduces forgo exercise intention.
2. Cognitive Control Theory	The cognitive control system is not activated in the food choice stage. People's self control reduces their forgo exercise decision.
3. Halo Effect	Choosing fitness labeled food increases forgo exercise intention.
4. Goals Research	Choosing fitness labeled food makes people with a normal BMI focusing more on goal commitment, so as to reduce their forgo exercise intention.

The distinction in perceived taste between fitness labeled food and non-fitness labeled food results in people’s preference towards the non-fitness labeled food. Accordingly, people have to exert self-control to choose a less desired fitness labeled food, and the performance of self-control consumes self-regulation resource. Please note that we cannot really measure everyone’s initial amount of self-regulation resource, the average resource cost for each self-control performance, or the minimum amount of remained self-regulation resource that ensure a successful self-control performance. According to the depletion theory, choosing fitness labeled food consumes self-regulation resource, but it will not necessarily exhaust one’s self-regulation resource, especially when the response conflict involved in the initial task is mild. As a result, we predict that although choosing fitness labeled food consumes self-regulation resource, the decision will not deplete the resource, and people still have enough self-regulation resource to exert self-control.

Moreover, when the response conflict is mild, the cognitive control system will not be activated in the food choice stage. People should have enough self-control capability to resist a goal-inconsistent behavior in the exercise choice setting.

The Halo effect suggests that choosing fitness labeled food increases intention to forgo exercise regardless of the presence or absence of a response conflict.

According to the goal research, how would people make their exercise decision is the question of whether the effort of overcoming a mild response conflict to pursue a long-term goal signals a commitment or a progress? People use goals to facilitate the achievement of their desired end state. The first thing they tend to consider is whether the goal is achievable or not. Then they will consider whether the goal is valuable and important. These considerations allow people to evaluate their commitment to the goal (Zhang & Huang, 2010). Yet people's goal commitment is usually ambiguous at this point. Koo & Fishbach (2014) suggest that when goal commitment is ambiguous, both the amount of effort required to achieve the goal, and the difficulty of efforts needed for goal attainment are uncertain. Therefore, a goal-related action will enable people to focus on their goal commitment. Based on this idea, when a mild response conflict is involved in food choice, overcoming the conflict to exercise a goal-consistent behavior does not require many efforts. Thus, this goal-consistent behavior is not sufficient enough to showcase the amount and difficulty of efforts needed to attain the goal, nor to reduce the discrepancy between people's current state and the desired state. As a result, the behavior will highlight goal commitment rather than signaling goal progress.

2.4.3.3. Hypotheses Formulation

To sum up, when there is a mild response conflict involved in food choice, both the depletion effect and the cognitive control system are not activated. People should have sufficient self-control capacity to regulate their decisions. The halo effect predicts an increased forgo exercise intention after choosing fitness labeled food, due to the health halo produced by fitness

label. The goal research suggests the key is whether the food choice highlights the fitness goal or indicates the progress that has been made. Since the effort devoted to making the food choice is not substantial when the response conflict is mild, the food choice will highlight goal commitment rather than signal progress. Also, since goals have more significant effects on people's behaviors than unconscious influences, and goal commitment overrides the influence of halo effect. Therefore, we hypothesize that,

H₂: when a mild response conflict is involved in food choice, choosing fitness labeled food vs. choosing non-fitness labeled food negatively and significantly affect consumer's intention to forgo exercise.

Study 2 will be used to examine H₂.

2.4.3.4. Precondition

Goal research argues that when people focus more on goal commitment, they will be more likely to exercise goal-consistent behaviors. In other words, when a mild response conflict is involved in food choice, choosing fitness labeled food vs. non-fitness labeled food will enable people to have an increased exercise intention. However, this prediction has a precondition, that is, people must agree with the value of the goal. As we explained earlier, people rely on the value and importance of a goal to form their goal commitment. A goal will not be activated if people do not value the end state of the goal (Forster et al., 2007). Therefore, in order for people to focus on the goal commitment, they need to value the end state of the goal.

This dissertation suggests that people's body mass index (BMI) could be an indicator of such a precondition. BMI is a screening tool that indicate whether people have healthy weight relative to their height. It can be calculated using people's height and weight. Normal BMI

ranges from 18.5 to 24.9. Participants with BMI smaller than 18.5 are considered underweight, and those with BMI greater than 24.9 are considered overweight or obese. There are two major reasons why BMI could set a precondition. First, people with a higher-than-normal BMI face more challenges to achieve a fitness goal, and have lower probability of achieving the goal. According to what we explained earlier, when people set a goal, they will immediately evaluate the attainability of the goal, and give it up if the goal seems too difficult to achieve. Therefore, commitment to the fitness goal is more likely to be relevant for people with a normal or lower BMI.

Second, BMI can roughly reflect how sedentary a person's lifestyle is, and estimate the person's ability to exercise. Usually, people with high BMI are less active than people with normal or low BMI. Genetic influence could be an exception (Dobosiewicz et al., 2018), yet there is evidence that regular exercise can reduce the genetic influence on BMI (Wang et al, 2016). This is to say, a person who exercises regularly is unlikely to have a high BMI even if his genetic condition makes him easier to gain weight. Accordingly, people with high BMI are more likely to be those who are indifferent to fitness goal and reluctant to exercise. High BMI also confines a person's ability to exercise (Salgado-Garcia et al., 2017). As a result, people with high BMI are less able to exercise even when they wish, which makes it easier for them to give up exercise. Since the normal range of BMI is 18.5 to 24.9, we suggest that people with a BMI equal to or lower than 24.9 will demonstrate more intention to exercise when a mild response conflict is involved in food choice. Therefore, we estimate that the effects of H₂ will be enhanced among people whose BMI falls within the normal range.

2.4.4. When a Strong Response Conflict is Involved in Food Choice

When choosing fitness labeled food vs. choosing non-fitness labeled food involves a strong response conflict, people’s reaction mechanism will be completely different. Theories and their corresponding predictions are demonstrated in Table 4.

Table 4

Theories and Predictions When There is a Strong Response Conflict

Theory	Prediction
1. Ego-strength Model of Self-regulation	Self-regulation resource is largely consumed when choosing fitness labeled food. People will not have enough self-regulation resource in the exercise decision stage. Choosing fitness labeled food increases intention to forgo exercise.
2. Cognitive Control Theory	The cognitive control system is activated when people choose fitness labeled food. People who chose fitness labled food will encounter more obstables to make a goal-consistent exercise decision. Choosing fitness labeled food increases intention to forgo exercise.
3. Halo Effect	Choosing fitness labeled food increases intention to forgo exercise.
4. Goals Research	Choosing fitness labeled food makes people focusing more on goal progress, so as to increase their forgo exercise intention.

First of all, resolving a strong response conflict requires a large amount of self-regulation resource. According to the depletion theory, self-regulation resource is limited. As result, after exerting self-control to perform a goal-consistent behavior in an initial task, the available self-regulation resource will be less. If the self-regulation resource is depleted in an initial self-control task, a subsequent goal-inconsistent behavior is more likely to occur. Overcoming a strong response conflict requires a large amount of self-regulation resource. And consumption of a large amount of self-regulation resource reduces people’s ability to exercise self-control in a subsequent decision setting. That is, people will be more likely to forgo exercise after overcoming a strong response conflict in order to choose a fitness labeled food.

In the meanwhile, people's cognitive control system will be activated when there is a strong response conflict. According to the theory, when the current level of self-control is not sufficient enough to perform a conflict resolution task, the occurrence of the conflict triggers the activation of the cognitive control system, which will intervene people's responses (Botvinick et al., 2001). For instance, when the current self-control level is insufficient to resolve a severe response conflict, people's cognitive control system will automatically adjust their reactions to the response conflicts. When people encounter consecutive, different and demanding response conflicts, since the control process has already been activated to deal with an initial response conflict, it is difficult to immediately shift the control process to another control process to deal with a different response conflict. For that reason, after the cognitive control system activates a control process to facilitate a reaction to an initial response conflict, the system cannot immediately shift the process to another different process in order to facilitate a different task. Therefore, when people encounter consecutive, different and demanding response conflicts, they might be able to exert self-control during the first task, but they are less likely to exert self-control during the second task, due to the difficulty in shifting cognitive control process. In the context of strong response conflict, the initial task activates people's cognitive control system during food choice stage. After people's cognitive control system adjusted people's response to respond to the initial response conflict, the system cannot shift to a new mode to facilitate people's response to a different response conflict. Therefore, people will encounter more obstacles in reacting to the second response conflict, and they will have a greater chance to fail the second response conflict and forgo exercise.

With respect to goal commitment and goal progress, overcoming a strong response conflict makes the goal attainment process clear. The magnitude of effort devoted to overcome

the strong response conflict shifts people's attention from goal commitment to the result of their effort, which is the discrepancy between their current state and their desired end state. The shift in attention will enable people to consider their goal progress (Zhang & Huang, 2010; Koo & Fishbach, 2014). Based on the analysis above, we can predict that choosing fitness labeled food vs. choosing non-fitness labeled food will encourage people to forgo exercise. A summary of our predictions using each theory is attached in Table 4.

H₃: when a strong response conflict is involved in food choice, choosing fitness labeled food vs. choosing non-fitness labeled food positively and significantly affect consumer's intention to forgo exercise.

Study 2 will be used to examine H₃.

2.4.5. Alternative Explanation of Consumer's Intention to Forgo Exercise

As explained previously, according to depletion theory and cognitive control theory, people have the self-control capacity to inhibit their short-term "want", the inhibition propels people to exhibit goal-consistent behaviors. The impact of self-control capacity on regulating goal-inconsistent behavior is not affected by external factors. In other words, consumer's self-control is able to regulate their food choice and exercise decision under all response conflict levels. Therefore, we hypothesize that,

H₄: Self-control negatively and significantly affect consumer's intention to forgo exercise.

Our conceptual framework is demonstrated in Figure 1 and Figure 2.

Figure 1: Conceptual Framework: Main Effect

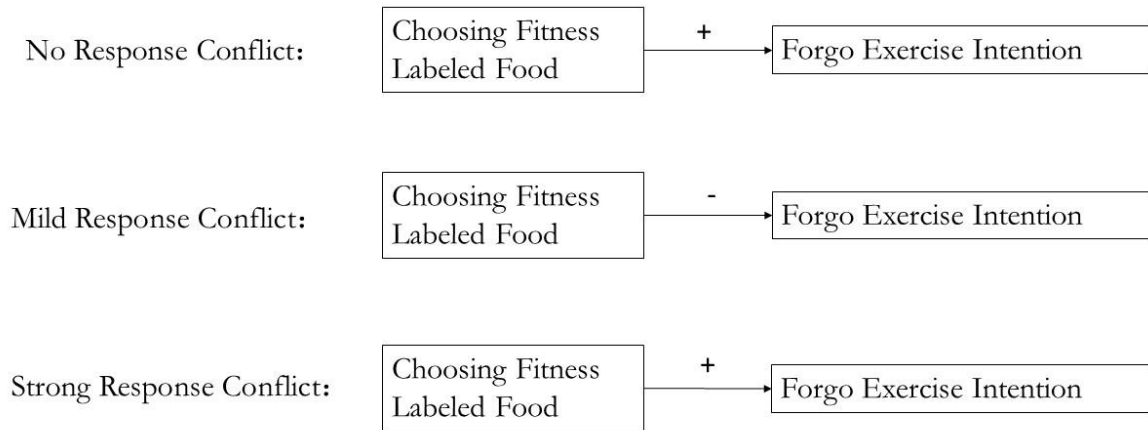


Figure 2: Conceptual Framework: Alternative Explanation



CHAPTER III

METHODOLOGY

3.1. Research Design

The next section demonstrates studies that explore what do fitness and fitness label on food mean to consumers. And second, this dissertation investigates the effect of choosing fitness labeled food on subsequent intention to forgo exercise when response conflict is absent, mild, and strong. In the meanwhile, this dissertation examines the impact of self-control on intention to forgo exercise.

To reflect consumer's choice of fitness labeled food, scenarios are employed to describe a situation where a hypothetical person has to choose either a fitness labeled food or a non-fitness labeled food. To measure consumer's inclination to forgo exercise, respondents will be asked whether they agree that the hypothetical person can forgo exercise or not post her food consumption. A preliminary study, and four main studies are conducted.

3.1.1. Preliminary Study

The purpose of the preliminary study is to find out what does fitness mean to consumers, and what does fitness label on food mean to consumers. The preliminary study helps to better understand the meaning of fitness label. Understanding the meaning of fitness label has important implications. Previous sections mention that many research studies have already

investigated the effect of organic label on exercise intention. Both fitness label and organic label pertain to persuasive language label category, yet fitness label's effect deserves exploration because it is the only label that primes the end state of exercise. This preliminary study helps us to know if people would associate fitness label with exercise and whether fitness label has many other important meanings. The preliminary study is comprised of two open-ended surveys. Participants are asked to write down what does fitness mean to them, and what does fitness label on food mean to them.

3.1.2. Research Design of Study 1

The purpose of study 1 is to examine H_1 , which is the effect of choosing fitness labeled food on intention to forgo exercise when the food choice stage does not involve any response conflicts. In study 1, participants do not receive any food-related information other than the food label, the two food options are almost identical except that they have different labels. This design helps to make sure that the two food options will not result in any response conflict or will only result in minimum response conflicts. This is because there is no additional information that can put the two options in both advantaged and disadvantaged positions. In the meanwhile, this manipulation helps to ensure that any effect on intention to forgo exercise comes from the fitness label. The research design of study 1 is adapted from Schuldt & Schwarz (2010). Study 1 focuses on comparing respondents' opinions towards forgoing exercise under two conditions: choosing fitness labeled food vs. choosing non-fitness labeled food. Therefore, study 1 employs a single-factor research design with 2 conditions. The scenario designed by Schuldt & Schwarz (2010) describes a university student's dessert choice between a regular dessert and an organic dessert. Then a survey question asking respondents to indicate whether they think the student in the

scenario can forgo exercise. This original experiment is designed to examine whether the choice of a regular dessert, an organic dessert or no dessert serves to affect respondents' acceptance towards forgoing exercise. We found this experimental design appropriate for testing the impact of choosing fitness labeled food on intention to forgoing exercise. Scenarios used in study 1 is attached in Appendix A.

3.1.3. Research Design of Study 2

The purpose study 2 is to examine H₂, that is, investigating the effect of choosing fitness labeled food on intention to forgo exercise when the food choice stage involves a mild response conflict. Study 2 continues to use the basic scenario design of study 1. Therefore, study 2 adopts a single-factor experimental design with 2 conditions. In study 2, participants receive more information about the taste of the two food options to reflect the existence of a mild response conflict. This method was employed by Prada et al., (2016), where they manipulate the strengths of the moderating factors by adding a brief description in each scenario. Based on the scenarios used in study 1, the new scenarios briefly explain that non-fitness labeled food tastes better than fitness labeled food. The scenarios in the mild response conflict condition do not emphasize the response conflicts experienced by the hypothetical person in her food choice. The response conflict is manipulated rather than measured. Participants are asked to answer a series of survey questions after reading the scenario. Survey questions used in study 2 is exactly the same as the questions used in study 1. Scenarios used in study 2 is attached in Appendix B.

3.1.4. Research Design of Study 3

The purpose of study 3 is to examine H₃, that is, investigating the effect of choosing fitness labeled food on forgo exercise intention when the food choice involves a strong response conflict. Study 3 continues to use the basic scenario design of study 1 and study 2, which makes study 3 a single-factor research design as well. In study 3, the scenarios emphasize the taste difference, as well as the conflict the hypothetical person experienced. The response conflict is manipulated rather than measured.

In study 2, response conflict is hinted to respondents by suggesting that choosing fitness labeled food requires sacrificing taste. Whereas in study 3, the scenarios explicitly present a conflict in front of respondents: satisfying a craving immediately or following a long-term fitness goal. This simple manipulation makes response conflict stronger in study 3, because the conflict is more salient. While at the same time this simple manipulation ensures the scenarios used for both studies are not significantly different.

After reading the scenario, participants are asked to answer the same set of survey questions as those used in study 1 and study 2. The detailed scenario design is attached in Appendix C.

3.1.5. Research Design of Study 4

The purpose of study 4 is to identify the mechanism that explains choosing fitness labeled food's impact on forgo exercise intention when there is a strong response conflict. According to section 2.4.4., H₃ is developed based on the depletion theory, the cognitive control theory, and the research about goal progress. All three theories generate the same prediction, which is the

positive impact of fitness label on intention to forgo exercise. Study 4 aims to identify the exact theory that explains the positive impact of fitness label on forgo exercise intention.

Study 4 uses a single-factor experimental design with 2 conditions. Participants are asked to read one of the scenarios that describe a strong response conflict used in study 3. The response conflict is manipulated rather than measured. Then instead of indicating their willingness to forgo exercise, participants are asked to read a second scenario about making another food choice. After reading the second scenario, participants are asked to indicate their willingness to forgo exercise. This scenario design follows a sequence of food choice response conflict A1 + food choice response conflict A2 + exercise response conflict B. The first two consecutive same response conflicts help to rule out either the depletion theory or the cognitive control theory. If respondents assigned to fitness condition in A1 demonstrate goal-consistent behavior in A2, the result can rule out depletion theory since this result suggests respondents' self-regulation capability is not depleted in A1. If respondents assigned to fitness condition in A1 demonstrate goal-inconsistent behavior in A2, the result can rule out cognitive control theory, since self-regulation in A1 does not facilitate self-regulation in A2. With the three consecutive response conflicts: A1 + A2+ B, this design helps to determine if goal progress is playing a role. This is because with the effect of goal progress, respondents assigned in fitness condition in A1 are supposed to demonstrate two consecutive goal-inconsistent behaviors in A2 and B. The detailed scenario design is attached in Appendix D.

3.2. Measurements

The four main studies have one dependent variable, and two competing independent variables: self-control and choosing fitness labeled food (hereafter: fitness label). Measurements

are adapted to examine dependent variable: intention to forgo exercise; and independent variable: self-control. Fitness label is manipulated. The response conflict level is manipulated in the scenarios of study 2, study 3 and study 4, it is not measured. The following section explains measurements.

3.2.1. Dependent Variable: Intention to Forgo Exercise

The dependent variable of this study is intention to forgo exercise. In the studies by Schuldt & Schwarz (2010) and Prada et al. (2016), intention to forgo exercise is measured by one question immediately after the scenario, the question is “under this circumstance, do you think it would be okay for the person in scenario to skip her usual 3- mile run tonight”. Respondent’s answers range from 1 to 7, with 1 representing “not okay at all”, and 7 representing “very okay”. To better capture respondents’ opinions about need for exercise, this study adopts the question used by Schuldt & Schwarz (2010) and Prada et al. (2016), and creates three other 7-item Likert scale questions to measure need for exercise. The items are demonstrated in Table 6.

Table 5

Intention to Forgo Exercise Measure

Intention to Forgo Exercise	
Items	Source
1. Under this circumstance, do you think it would be okay for her to skip her usual 3-mile run tonight?	Schuldt & Schwarz (2010)
2. Under this circumstance, do you support that she should skip her usual 3-mile run tonight?	Self-developed
3. To what extent do you think she should continue her usual 3-mile run tonight?	Self-developed
4. Do you think skipping the 3-mile run is a good decision?	Self-developed
5. If you were her, would you skip the 3-mile run?	Self-developed

3.2.2. Rival Independent Variable: Self-Control

Self-Control is an important independent variable because according to the depletion theory and the cognitive control theory, when a response conflict is absent or mild, people's self-control capacity plays a vital role in influencing their subsequent exercise decision. Please note that a person's self-control evaluation is not equal to the self-control capacity he/she has when facing a dilemma. This is because first of all, the person's self-evaluated self-control ability is subjective, a difference could exist between the person's actual self-control ability and his/her subjective self-evaluated self-control. Second, a person's self-control ability is not equal to the amount of self-regulation resource he/she has at a specific point of time. According to the depletion theory, people consume self-regulation resource whenever they need to overcome a conflict or dilemma, which reduces their self-control capacity in subsequent dilemmas. Therefore, people's self-control capability is dynamic, whereas their self-evaluated self-control value is static.

However, people's self-evaluated self-control value is an important indicator of their current self-control capability when the response conflict is absent or mild. This is because they haven't consumed a significant amount of self-regulation resource yet, so the difference between their self-evaluated self-control value and current self-control capability is not significant when response conflict is absent or mild.

This study uses two 7-point Likert items to measure participants' self-control. These items are: "I am able to work effectively toward long-term goals while resisting temptations along the way", and "usually, when something tempts me, I manage to resist the temptation". The two items constitute a short version of Dispositional Self-Control (DSC) scale adopted from Ein-Gar & Steinhart (2011).

Table 6

Self-Control Measure

Self-Control	
Items	Source
1. I am good at resisting temptation.	Ein-Gar & Steinhart (2011)
2. I am able to work effectively toward long-term goals.	Ein-Gar & Steinhart (2011)

3.3. Procedures and Results of Preliminary Study

This is a preliminary study that aims to investigate the meaning of fitness and the meaning of fitness label to consumers. This preliminary study is independent from the four main studies. Two independent surveys were collected asking people to write down their understanding about the word fitness and the label fitness on food. Two PhD students from other majors helped with the coding process. Since the answers are usually short, they used exploratory coding that allow the texts to guide their coding. A total of 49 respondents (female=46.9%, $M_{Age}=24$, $SD_{Age}=5.85$) ranging from 20 to 48 years old answered the question “what does fitness mean to you”. Four of the surveys were left blank, leaving the total number of responses 45. As demonstrated in Table 7, the survey generated five groups of definitions about fitness. These definitions include: being healthy, being healthy and having a good body shape, release stress and feel good, to be physically active, and it represents quality of life. As expected, these results indicate that people may associate the word fitness with health, which is in accordance to our argument in previous sections saying that fitness might be able to create a health halo just like the organic label. Moreover, the word fitness also reminds people of physical activity and good body image, this is accordance with our argument that fitness label might be able to prime the goal of being fit.

A total of 115 respondents (female=48.7%, $M_{Age}=22$, $SD_{Age}=3.73$) ranging from 18 to 36 years old answered the question “what does fitness in food mean to you”. One incomplete response was eliminated. Different from responses to the meaning of fitness, responses to the meaning of fitness in food generated a total of 11 themes, some of them are overlapping themes, each response involved 1 to 4 themes.

As demonstrated in Table 7 below, these themes include: 1) Worse taste. For example, one respondent wrote, “Less calories, carbs, smaller portions, potentially compromised taste to improve nutrition value”. Three respondents mentioned worse taste. 2) Boost energy. For example, one respondent wrote, “Boost energy and endurance for exercise”. Thirteen respondents mentioned boost energy. 3) Support weight control. For example, one respondent wrote, “It helped me lose weight”. Twenty-eight respondents mentioned support weight control. 4) Improve body shape. For example, one respondent wrote, “Healthy body and sexy body”. Three respondents mentioned improve body shape. 5) Support health. For example, one respondent wrote, “Healthy, low sugar, lots of energy, on the go”. Sixty-nine respondents mentioned support health. 6) Better or healthier ingredients. Thirty-three respondents mentioned better or healthier ingredients. For example, one respondent wrote, “More calories to help with the workout but healthy ingredients”. Another respondent wrote, “They are somehow healthier, less sugar, more protein, etc.”. 7) Higher price. For example, one respondent wrote, “Healthy and expensive”. Three respondents mentioned higher price. 8) Increase positive emotion. For example, one respondent wrote, “Fitness makes us happy and satisfied”. Three respondents mentioned increase positive emotion. 9) Low calorie. For example, one respondent wrote, “Low calorie and zero sugar, loaded with vitamins”. Thirteen respondents mentioned low calorie. 10) Pure marketing. For example, one respondent wrote, “Misleading term”. Nine respondents

believe that fitness in food is pure marketing or a lie. 11) Moderation. For example, one respondent wrote, “Moderation/abstaining from unhealthy food/beverages”. Two respondents mentioned moderation.

The result shows that the meaning of fitness label on food and the meaning of the word fitness has two similarities. The first similarity is fitness label on food can also result in a health halo, which makes people believe that the food is healthier and contains less calorie content. The second similarity is the ability to prime the goal of getting fit. Furthermore, fitness label may also produce an impression that the food is less tasty, this is consistent with previous findings showing that consumers tend to associate healthy food with worse taste (Chrysochou & Grunert, 2014; Orquin & Scholderer, 2015; Mai & Hoffmann, 2015). This finding is also consistent with our previous assumption, that fitness labeled food may be associated with unpleasant taste. Its unpleasant taste and its ability to promote fitness may produce a response conflict, that impairs subsequent exercise intention. In sum, both surveys indicate that a large number of consumers tend to relate “fitness” with “health”. When “fitness” is used in food, a good portion of consumers might perceive the food to be healthy with better ingredients, low calorie while still be able to boost energy, and is helpful for controlling weight.

Table 7

Demonstration of Responses

	Responses	Number of responses	Percentage
What does "fitness" mean to you	Being healthy	20	44.44%
	Being healthy and having a good body shape	7	15.56%
	Release stress and feel good	4	8.89%
	To be physically active	3	6.67%
	Quality of life	11	24.44%
What does "fitness label" on food mean to you	Worse taste	3	2.63%
	Boost energy	13	11.40%
	Support weight control	28	24.56%
	Improve body shape	3	2.63%
	Support health	69	60.53%
	Better or healthier ingredients	33	28.95%
	Higher price	3	2.63%
	Increase positive emotion	3	2.63%
	Low calorie	13	11.40%
	Pure marketing	9	7.89%
Moderation	2	1.75%	

CHAPTER IV

STUDY 1

The purpose of study 1 is to investigate the impact of choosing fitness labeled food on consumer's forgo exercise intention when response conflict is not present in food choice. Fitness label condition is manipulated in scenarios (Appendix A). This chapter describes the design, procedure, and results of study 1.

4.1. Experimental Design

The experimental design of study 1 is mainly developed based on Schuldt & Schwarz (2010)'s scenario design, study 1 made the following modifications. First, the choice of food in the scenario is made between a fitness trail mix and non-fitness trail mix. Koenigstorfer & Baumgartner (2016) show that the negative effects of fitness labels increase when food is primed as dietary-permitted, and vanish when the food is primed as dietary-forbidden. Rather than using desserts that are either considered as vice or virtue, this study uses neutral food to keep the result free from possible intervening variables. According to Knight & Boland (1989), trail mix can be considered as both vice food and virtue food. Second, the scenario used in the study 1 has two rather than three conditions: fitness trail mix condition and non-fitness trail mix condition. Study 1 doesn't have the no dessert condition. This is because the purpose of this dissertation is to explore how a goal-consistent behavior (choosing fitness labeled food) affects a subsequent

goal-consistent behavior (exercise). The first goal-consistent behavior is the independent variable of this dissertation. The no dessert condition doesn't consider the first goal-consistent behavior; therefore, it does not pertain to the research purpose of this dissertation.

Intention to forgo exercise is our dependent variable, study 1 uses five 7-point Likert items to measure this dependent variable, the items are: "under this circumstance, do you support that she should skip her usual 3-mile run tonight?", "under this circumstance, do you think it would be okay for her to skip her usual 3-mile run tonight?", "to what extent do you think she should continue her usual 3-mile run tonight?", "do you think skipping the 3-mile run is a good decision?", and "If you were her, would you skip the 3-mile run?". Self-control is measured by two 7-point Likert items, they are: "I am good at resisting temptation", and "I am able to work effectively toward long-term goals".

Study 1 also creates two items to examine the health halo produced by fitness label. Participants are asked to indicate to what extent they agree with the two items: "compare with regular trail mix, fitness trail mix has less calorie", and "compare with regular trail mix, fitness trail mix is more healthful".

Participants of study 1 are recruited from Amazon Mechanical Turk (MTurk). MTurk is a crowdsourcing marketplace that has been used by many researchers to collect data for experimental research and surveys. Its reliability, efficiency, and effectiveness have been supported by many researchers (e.g. Huang & Sengupta, 2020; Scott et al., 2020).

4.2. Procedure

There is a total of 303 participants completed the survey in exchange for a \$1 compensation. They were told that the researchers were interested in understanding consumer's

lifestyles as well as their opinions towards a hypothetical situation, the survey takes about 10 minutes. Participants were directed to a demographic section after they clicked on the “start” button. The demographic section includes questions about participants’ age, gender, ethnicity, height, weight, exercise frequency and exercise intensity. These demographic questions help to ensure that participants in both conditions are not significantly different. After participants finished the demographic section, they were asked to estimate their self-control. Then they were randomly led to one of the two scenarios about a college student’s food choice and her exercise decision.

After reading the scenario, participants were asked to indicate the extent to which they agree that the student should forgo exercise. Participants’ own preferable food choice, their evaluations of the calorie contents, and healthfulness of the two food choices were measured subsequently. Two attention check questions were inserted in the middle of these questions. The first attention check question asked participants to indicate “which trail mix did the hypothetical student choose”. The second attention check question asked participants to select “5”.

The first step of the data screening process is to check for missing values. Since the survey has forced response on all questions, all submitted surveys were completely answered. The second step is to eliminate all responses that don’t pass the attention check questions and the responses that were completed within a very short period of time (e.g. within 250 seconds). This is because we tested reading surveys before distributing them, and it took about 5 to 10 minutes to complete the survey. Ninety responses failed this screening process; they were eliminated at this stage, leaving a total of 213 responses for study 1 (female= 50.7%, $M_{age}= 30.45$, $SD_{age}= 11.845$). The descriptive statistics of all participants in study 1 is demonstrated in Table 8.

Participants in the fitness label condition and non-fitness label condition are not significantly different in terms of their age, gender, exercise frequency, and exercise intensity.

Table 8

Descriptive Statistics of Participants in Study 1

	Fitness Label Condition (N=98)	Non-Fitness Condition (N=115)
Demographics		
Age	$M_{age}=30.56$ (16 - 67 years)	$M_{age}=30.36$ (16 - 69 years)
Female	49%	52%
Personal Characteristics		
Exercise Frequency	$M_{frequency}=3.24$ day/week	$M_{frequency}=3.13$ day/week
Exercise Intensity	$M_{intensity}=3.61$	$M_{intensity}=3.45$

4.3. Results

4.3.1. Reliability and Validity

This study uses Cronbach's alpha, composite reliability (CR), standardized factor loadings (SFL), average variance extracted (AVE), as well as correlation and square root of AVE to examine the reliability and validity of the scales. According to Hair et al. (2010), the reliability score measured by Cronbach's alpha should exceed a threshold of 0.7 to demonstrate enough reliability. Results of the reliability and validity tests can be found in Table 9 and Table 10.

Based on Table 9, the five items of intention to forgo exercise loaded on one single factor, all the factor loadings are greater than 0.7. Moreover, the intention to forgo exercise scale has high enough AVE (greater than 0.5), CR (greater than 0.7), and Cronbach's alpha values (greater than 0.7), suggesting that the scale has acceptable reliability and convergent validity. The two self-control items loaded on the same factor; all factor loadings are greater than 0.5. The

scale has high enough AVE, CR, and a slightly low Cronbach's alpha value. We will keep the scale since self-control has a very good CR, suggesting the scale is reliable (Tangney et al., 2004; Ein-Gar & Steinhart, 2011).

Table 9

Results of Reliability Test of Latent Variables: Standardized Factor Loadings, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha

Constructs	SFL	AVE	CR	Alpha
Forgo Exercise		.698	.920	.898
Do you support that she should skip her usual 3-mile run tonight?	.881			
Do you think it would be okay for her to skip her usual 3-mile run tonight?	.835			
Do you think skipping the 3-mile run is a good decision?	.896			
If you were her, would you skip the 3-mile run?	.812			
(R) To what extent do you think she should continue her usual 3-mile run tonight?	.746			
Self-Control		.683	.812	.617
I am good at resisting temptation.	.810			
I am able to work effectively toward long-term goals.	.840			

Table 10

Results of Validity Test: Correlation and Square Root of AVE

		Forgo Exercise	Self-control
Forgo Exercise	Pearson Correlation	.835	
	Sig. (2-tailed)		
Self-control	Pearson Correlation	-.206**	.826
	Sig. (2-tailed)	.003	

Note: Square Root of AVE on Diagonal

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

c. Listwise N=213

Table 10 shows the correlation between factors and the square root of AVE on diagonal. As we can see from the table, the square root of AVE is greater than the inter-construct correlation. Therefore, the discriminant validity level of the latent factors is acceptable.

4.3.2. Fitness Label’s Impact on Calorie Level and Healthfulness

Study 1 first examines if fitness label is able to create a health halo. Two questions are used to measure the health halo produced by fitness label. These questions include 1) to what extent do you agree that fitness trail mix has less calorie; 2) to what extent do you agree that fitness trail mix is more healthful. As shown in Table 11, the neutral point of these three questions is 0, it means the respondent neither agree nor disagree with the question. The result indicates that fitness label can indeed produce a health halo. Participants tend to agree that fitness trail mix has less calorie than non-fitness labeled trail mix; they also tend to agree that fitness trail mix is more healthful than non-fitness labeled trail mix.

Table 11

Test of Health Halo

	One-Sample Test							
	Test Value = 0							
	Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper		
Fitness trail mix has less calorie	1.017	9.854	282	.000	1.017	.813	1.220	
Fitness trail mix is more healthful	1.222	12.281	282	.000	1.222	1.026	1.419	

4.3.3. Fitness Label’s Impact on Intention to Forgo Exercise

To compare forgo exercise intention in two food label conditions, the One-Way ANOVA is employed. The result shows that $M_{\text{Fitness}}=3.831$, $SEM_{\text{Fitness}}=.162$; $M_{\text{Non-Fitness}}=3.744$, $SEM_{\text{Non-Fitness}}=.147$. This result suggests that when response conflict is not present, people’s intention to

forgo exercise in the fitness trail mix condition and the Non-fitness trail mix condition is not significantly different ($F < 1$, ns). The result also shows that the health halo produced by the fitness label does not make people more likely to forgo exercise. Therefore, H_1 is not supported.

4.3.4. Self-control's Impacts on Intention to Forgo Exercise

Next to examine the impact of self-control on forgo exercise intention. A linear regression analysis is conducted. Self-control explains 3.8% of forgo exercise's variation (Beta = -.208, $t = -3.059$, $p = .002$). Choosing fitness labeled food does not explain forgo exercise's variation (Beta = .037, ns). This result is consistent with H_4 , which suggests that participants' self-control negatively and significantly affects intention to forgo exercise.

4.4. Discussion

The purpose of study 1 is to employ improved measures to examine the impact of choosing fitness labeled food when response conflict is not involved in food choice. According to theoretical analysis, both the depletion theory and the goal cognitive theory suggest that respondents should have enough self-control capacity to regulate their exercise decision. The halo effect predicts more intention to forgo exercise. The goal research cannot provide any predictions.

Study 1 finds that participants tend to evaluate fitness trail mix as having lower calorie and being healthier, this finding suggests that the fitness label is able to generate a health halo. However, this health halo does not lead to a halo effect that leads to more intention to forgo exercise. Moreover, choosing fitness labeled trail mix does not have a significantly impact on intention to forgo exercise, participants in fitness label and non-fitness labeled food conditions exhibit indifferent intentions to forgo exercise.

Also, both the depletion theory and the cognitive control theory suggest that when there is no response conflict, people should have enough self-capacity in regulating their exercise decision. And respondents' self-evaluated self-control value indicate the amount of self-control capacity they have when there is no response conflict. Study 1 suggests that participants' self-control negatively and significantly affect intention to forgo exercise. This is consistent with the prediction of the depletion theory and the cognitive control theory. Study 2 examines the effect of fitness label when a mild response conflict is involved. A mild response conflict is manipulated in the two scenarios of Study 2.

CHAPTER V

STUDY 2

The purpose of study 2 is to examine how choosing fitness labeled food impacts consumer's forgo exercise intention when a mild response conflict is involved in food choice. As explained in previous chapter, study 1 is a replication of previous studies that do not consider the role of response conflict. Study 1 finds that choosing fitness labeled food does not affect subsequent exercise intention when response conflict is absent. Based on this result, study 2 further explore the impact of choosing fitness labeled food by introducing a mild response conflict. The employment of study 2 follows a logical sequence. A mild response conflict and choosing fitness labeled food are manipulated in the scenarios (Appendix B). This Chapter presents the design, procedure, and results of study 2.

5.1. Experimental Design

Study 2 continues to adopt a single-factor experimental design. The scenarios incorporate a short description about the taste of the two food choices to hint a mild response conflict is involved in food choice (Scenarios can be found in Appendix B). Study 2 uses the same survey structure, measures, and attention check question as those used in study 1. One manipulation check question on attribute information was placed right after the scenario. Participants were asked to indicate on a 7-point scale (ranging from -3 to 3) if they agree that fitness trail mix

tastes better than non-fitness trail mix. The point -3 represents fitness trail mix tastes a lot worse than non-fitness trail mix. The point 3 represents fitness trail mix tastes a lot better than non-fitness trail mix. The midpoint 0 indicated that fitness trail mix and non-fitness trail mix are equally tasty. Our manipulation aims to describe fitness trail mix as tasting worse than non-fitness trail mix.

5.2. Procedure

Data is collected on MTurk, people who completed study 1 survey are assigned with a qualification that makes sure that they will not be allowed to take study 2 survey. A total of 300 participants completed the study 2 survey for \$1 compensation. They were told that the researchers were interested in studying modern consumers' lifestyles, they were also told that the survey required them to read a scenario about a college student's choices, the survey would take about 10 minutes. Participants had to complete a section about their demographic information before they could proceed to the scenario.

The first step of data screening is checking for missing data. The survey has a force response setting on all questions, participants could only abandon the survey or complete all questions in the survey once they hit the "start button". Thus, no missing data is found in submitted surveys. The next step is to eliminate responses that don't pass the attention check questions, and the responses that were completed within an extraordinary short period of time (such as within 250 seconds). Seventy-two responses didn't pass the attention check or speed check, leaving us a total of 228 responses (female= 45.2%, $M_{age}= 29.96$, $SD_{age}= 12.046$).

The majority of participants (97%) passed the manipulation check question about taste perception. One-sample t-test was employed to compare mean ratings of taste perception to the

midpoint of 0. This method was adopted from Scott et al., (2020). $M=-2.34$, $SD= 1.13$, $t(228)= -24.47$, $p < .001$, $d= -2.08$. The descriptive statistics of participant sin study 2 is demonstrated in Table 12. Participants in the fitness label condition and non-fitness food condition are not significantly different in terms of their age, gender, exercise frequency, and exercise intensity.

Table 12

Descriptive Statistics of Participants in Study 2

	Fitness Label Condition (N=119)	Non-Fitness Label Condition (N=109)
Demographics		
Age	$M_{age}=30.92$ (16 - 70 years)	$M_{age}=28.91$ (16 - 67 years)
Female	54%	49%
Personal Characteristics		
Exercise Frequency	$M_{frequency}=3.36$ day/week	$M_{frequency}=3.28$ day/week
Exercise Intensity	$M_{intensity}=3.54$	$M_{intensity}=3.54$

5.3. Results

5.3.1. Reliability and Validity

The reliability and validity results are shown in Table 13 and Table 14. The results suggest sufficient reliability and validity. Self-control has a slightly low Cronbach’s alpha value, but its CR is high enough to suggest that this scale is reliable.

Table 13

Results of Reliability Test of Latent Variables: Standardized Factor Loadings, Average Variance Extracted (AVE), Composite Reliability, and Cronbach’s Alpha

Constructs	SFL	AVE	CR	Alpha
Forgo Exercise		.657	.905	.872
Do you support that she should skip her usual 3-mile run tonight?	.821			
Do you think it would be okay for her to skip her usual 3-mile run tonight?	.798			
Do you think skipping the 3-mile run is a good decision?	.900			
If you were her, would you skip the 3-mile run?	.788			
(R) To what extent do you think she should continue her usual 3-mile run tonight?	.738			
Self-Control		.700	.823	.631
I am good at resisting temptation.	.840			
I am able to work effectively toward long-term goals.	.838			

Table 14

Results of Validity Test: Correlation and Square Root of AVE

		Forgo Exercise	Self-control
Forgo Exercise	Pearson Correlation	<i>.811</i>	
	Sig. (2-tailed)		
Self-control	Pearson Correlation	-.220**	<i>.837</i>
	Sig. (2-tailed)	.001	

Note: Square Root of AVE on Diagonal

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

c. Listwise N=228

5.3.2. Fitness Label’s Impact on Calorie Level and Healthfulness

As shown in Table 15, participants in study 2 do not develop a health halo that favors fitness labeled trail mix. Participants do not consider fitness trail mix as having less calorie content, or being more healthful. This result suggests that fitness label did not generate a health halo in study 2.

Table 15

Test of Health Halo

	One-Sample Test							
	Test Value = 0							
	Mean	t	df	Sig. (2-tailed)	Mean Differen	95% Confidence Interval of the Difference		
					Lower	Upper		
Fitness trail mix has less calorie	-1.13	-7.636	227	.000	-1.130	-1.42		-.84
Fitness trail mix is more healthful	-.88	-5.953	227	.000	-.877	-1.17		-.59

5.3.3. Fitness Label’s Impact on Intention to Forgo Exercise

Choosing fitness labeled food is coded as 1, and choosing non-fitness labeled food is coded as 0. One-Way ANOVA analyses and independent sample t tests are employed to compare intention to forgo exercise in the fitness trail mix condition and non-fitness trail mix condition. The result suggests that intention to forgo exercise in both conditions are not significantly different ($M_{\text{Fitness}}=3.550$, $SEM_{\text{Fitness}}= .133$; $M_{\text{Non-Fitness}}=3.835$, $SEM_{\text{Non-Fitness}}=.140$, $t= -1.476$, ns). According to our conceptual analysis, choosing fitness labeled food has an impact on forgo exercise intention only when the precondition is met. That is, the impact of fitness label is only present among those whose BMI falls within the normal range. Goal commitment research suggests that this lower forgo exercise intention is only present among people who value the fitness goal, and respondents whose BMI falls within the normal range are more likely to value the fitness goal. Therefore, we select responses with a normal BMI. As explained earlier, a normal BMI range from 18.5 to 24.9. A total of 118 respondents’ BMI falls within the normal range. Respondents in the fitness trail mix condition have a significant lower intention to forgo exercise ($M_{\text{Fitness}}=3.511$, $SEM_{\text{Fitness}}= .190$; $M_{\text{Non-Fitness}}=4.109$, $SEM_{\text{Non-Fitness}}=.192$, $t= -2.202$, $p<0.05$, $d= -.406$), Cohen’s d is calculated to reflect the effect size. the Cohen’s d suggests that there is a -.406-standard deviation of the difference between the two conditions, the effect size of

the difference is medium. This result is consistent with H₂. So H₂ is supported among normal weighted respondents.

5.3.4. Self-Control's Impacts on Intention to Forgo Exercise

According to previous analysis, when response conflict is mild, both depletion theory and cognitive control theory suggest that people should have enough self-control capacity to regulate their exercise decision. To examine the impact of self-control and choosing fitness labeled food on forgo exercise intention. A linear regression analysis is conducted using all responses. Self-control (Beta=-.218, t= -3.362, p= .001) and choosing fitness labeled food (Beta=-.211, t=-1.410, ns) collectively explain 4.9% of forgo exercise's variation. This result is consistent with H₄.

Next, the same linear regression analysis is conducted using responses with a normal BMI. Self-control (Beta=-.273, t= -3.107, p= .002) and fitness label (Beta=-.091, t= -2.408, p= .018) collectively explain 9.9% of forgo exercise's variation. This result is also consistent with H₄. The result suggests that H₄ is supported.

5.4. Discussion

The purpose of study 2 is to examine how fitness label impacts consumer's forgo exercise intention when a mild response conflict is involved in food choice. The result has three implications. First, when response conflict is mild, choosing fitness labeled food significantly lowered people's intention to forgo exercise, this effect is only present among respondents whose BMI falls within the normal range. This result partially supports H₂, it suggests that fitness label is able to prime the goal of getting fit only among normal-weighted respondents.

Second, respondent's self-control significantly and negatively influences intention to forgo exercise. According to our conceptual analysis, both the depletion theory and the cognitive control theory suggest that when a mild response conflict is involved, people should have enough self-control capacity in regulating their subsequent exercise decision. Since people's self-regulation resource is not significantly consumed when the response conflict is mild, their self-evaluated self-control reflects their self-control capacity. Our result demonstrates this negative and significant effect of self-control on intention to forgo exercise. This is consistent with H₄.

Third, study 2 shows that health halo is not present, suggesting that fitness label does not necessarily create a health halo that bias people's judgements of fitness labeled food. The absence of halo effect in study 2 further suggests that goal commitment is most likely to be the mechanism that explains the impact of choosing fitness labeled food when a mild response conflict is involved in food choice.

As explained in our conceptual analysis section, a same behavior is able to prime goal commitment and signal goal progress. Yet goal commitment and goal progress predict completely different behaviors. Given the findings of study 2, an additional question to ask is whether increasing the magnitude of response conflict is able to shift consumer's attention from goal commitment to goal progress? We believe the answer is positive. In the next chapter, a study 3 is conducted to answer this question by examining choosing fitness label's effect on forgo exercise intention when a strong response conflict is involved in food choice. The response conflict is manipulated in the scenarios.

CHAPTER VI

STUDY 3

The purpose of study 3 is to examine how choosing fitness labeled food impacts consumer's forgo exercise intention when a strong response conflict is involved in food choice. Scenarios manipulate a strong level of response conflict, and choosing fitness label condition (Appendix C). This chapter presents the design, procedure, and results of study 3.

6.1. Experimental Design

This study continues to use a two-scenario experimental design. The scenarios incorporate a section describing the strong response conflict experienced by the hypothetical person in the scenario (scenarios can be found in Appendix C). Moreover, study 3 changes the stimuli used in scenarios from trail mix to energy bar. Both trail mix and energy bar can be considered as both healthy and unhealthy, depending on the ingredients of the food. Fitness label is used more frequently on energy bars in U.S. supermarkets, so study 3 uses energy bar as the stimuli in the scenarios. Study 3 uses the same survey structure, measures, manipulation check question and attention check questions as those used in study 2.

6.2. Procedure

Data of study 3 is collected on SurveyMonkey to reach a larger respondent base. A total of 200 participants completed study 3 survey for \$2 compensation. Same with study 1 and study 2, all respondents were told that the researchers were interested in studying consumers' lifestyles and wellbeing. In the introduction section of the survey, respondents were told that the survey takes about 10 minutes to complete, it requires them to read a short paragraph of a scenario about a college student's choice, the subsequent questions would be based on the scenario. Then they proceeded to complete questions about their demographic information before reading the scenario.

Study 3 went through the same data screening process, incomplete responses, responses that do not pass the attention check questions and responses that are completed too fast are eliminated, which makes the total number of valid responses 134 (female= 63.4%, $M_{age}= 35.63$, $SD_{age}= 12.446$). The descriptive statistics of all participants in study 3 is demonstrated in Table 16. Participants in the fitness label condition and non-fitness food condition are not significantly different in terms of their age, gender, exercise frequency, or exercise intensity.

The majority of participants (90%) passed the manipulation check question about taste perception. One-sample t-test was employed to compare mean ratings of taste perception to the midpoint of 0. $M=-1.41$, $SD= 1.56$, $t(134) = -10.49$, $p < .001$, $d= -0.91$.

Table 16

Descriptive Statistics of Participants in Study 3

	Fitness Label Condition (N=79)	Non-Fitness Label Condition (N=55)
Demographics		
Age	$M_{age}=35.79$ (16 - 65 years)	$M_{age}=35.41$ (17 - 65 years)
Female	66%	60%
Personal Characteristics		
Exercise Frequency	$M_{frequency}=3.56$ day/week	$M_{frequency}=3.58$ day/week
Exercise Intensity	$M_{intensity}=3.28$	$M_{intensity}=3.20$

6.3. Results

6.3.1. Reliability and Validity

The reliability and validity results are shown in Table 17 and Table 18. All items loaded on correspondent factors, all except one of forgo exercise item loadings are greater than 0.7. Since the items of forgo exercise demonstrate good reliability and validity in study 1 and study 2, we will continue to use them in study 3 despite one low factor loading. All AVE values are greater than 0.5, all CR values are greater than 0.7, and all Cronbach's alpha values are greater than 0.7, suggesting that these measures have acceptable reliability and convergent validity. Table 18 shows that the square root of AVE is greater than the inner-construct correlations, suggesting that the latent factors demonstrate enough discriminant validity.

Table 17

Results of Reliability Test of Latent Variables: Standardized Factor Loadings, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha

Constructs	SFL	AVE	CR	Alpha
Forgo Exercise		.641	.898	.867
Do you support that she should skip her usual 3-mile run tonight?	.819			
Do you think it would be okay for her to skip her usual 3-mile run tonight?	.831			
Do you think skipping the 3-mile run is a good decision?	.658			
If you were her, would you skip the 3-mile run?	.861			
(R) To what extent do you think she should continue her usual 3-mile run tonight?	.817			
Self-Control		.886	.894	.931
I am good at resisting temptation.	.948			
I am able to work effectively toward long-term goals.	.934			

Table 18

Results of Validity Test: Correlation and Square Root of AVE

		Forgo Exercise	Self-Control
Forgo Exercise	Pearson Correlation	.801	
	Sig. (2-tailed)		
Self-control	Pearson Correlation	-.366**	.941
	Sig. (2-tailed)	.001	

Note: Square Root of AVE on Diagonal
 **. Correlation is significant at the 0.01 level (2-tailed)
 *. Correlation is significant at the 0.05 level (2-tailed)
 c. Listwise N=134

6.3.2. Fitness Label's Impact on Calorie Level and Healthfulness

As shown in Table 19, study 3 observes a health halo produced by fitness label: participants agree that fitness energy bars contain less calorie, and are more healthful.

Table 19

Test of Health Halo

	One-Sample Test				Test Value = 0			
	Mean	t	df	Sig. (2-tailed)	Mean Differen	95% Confidence Interval of the Difference Lower	Upper	
Fitness trail mix has less calorie	.910	6.416	133	.000	.910	.63	1.19	
Fitness trail mix is more healthful	1.157	8.920	133	.000	1.157	.90	1.41	

6.3.3. Fitness Label’s Impact on Intention to Forgo Exercise

ANOVA analysis and independent sample t tests are employed to compare intention to forgo exercise in the fitness energy bar condition and non-fitness energy bar condition. Cohen’s d is calculated manually to examine the effect size of the difference. The result shows that consumers in fitness energy bar condition have significantly higher intention to forgo exercise, the effect size is medium large ($M_{\text{Fitness}}=2.795$, $SEM_{\text{Fitness}}= .145$; $M_{\text{Non-Fitness}}=2.007$, $SEM_{\text{Non-Fitness}}=.143$, $t= 3.746$, $p<0.01$, $d= .658$). This result is consistent with H₃, which suggests that when a strong response conflict is involved, people in fitness label condition are more likely to forgo exercise than people in non-fitness food condition. However, the median value of forgo exercise is 4, value 4 refers to a neutral opinion about forgoing exercise. Accordingly, values lower than 4 indicate disagreement to forgo exercise. Therefore, even though fitness label significantly increases consumer’s intention to forgo exercise, respondents in both conditions generally disagree with forgoing exercise when a strong response conflict is involved.

6.3.4. Self-Control’s Impacts on Intention to Forgo Exercise

According to previous analysis, when response conflict is strong, people will execute self-control to regulate their choice, yet both depletion theory and cognitive control theory

suggest that people may not have enough self-control capacity to regulate their exercise decision. To examine if self-control is depleted, as well as examine fitness label's effect on forgo exercise intention. A linear regression analysis is conducted using all responses. Self-control (Beta=-.390, $t = -5.023$, $p < .001$) and fitness label (Beta=.238, $t = 3.064$, $p = .003$) collectively explain 22.8% of forgo exercise's variation. This result is consistent with H₃ and H₄.

6.4. Discussion

The purpose of study 3 is to examine how fitness label impacts people's exercise decision when a strong response conflict is involved in food choice. H₃ and H₄ predict that choosing fitness labeled food significantly increases intention to forgo exercise, and self-control significantly decreases intention to forgo exercise. These predictions are supported in our results. And the collective predicting power of self-control and choosing fitness labeled food increases as the severity of response conflict increases. There are four theories and models that may explain this result: the depletion theory, the cognitive control theory, the halo effect, and the role of goal progress.

Nevertheless, the result also shows that although respondents in fitness condition demonstrate significantly more intention to forgo exercise, intention to forgo exercise in both conditions are lower than the neutral point, suggesting that despite the positive effect of fitness condition on forgo exercise intention, respondents generally disagree to forgo exercise in both conditions. This result rules out the depletion theory as a possible explanation, since respondents have demonstrated sufficient self-control to make a goal-consistent exercise decision. So, the next question is which of the remaining 3 theories and models can be used to explain the phenomenon? Study 4 is conducted to answer this question.

CHAPTER VII

STUDY 4

7.1. Experimental Design

The purpose of study 4 is two-fold. First of all, it tries to answer which theory or model explains the phenomenon observed in study 3. Second, it looks at how choosing fitness labeled food affects subsequent food choice when response conflict is strong. The remainder of the chapter presents the rationale, design, procedures, and results of study 4.

7.1.1. Rationale of Study 4

Study 3 finds that when a strong response conflict is involved, fitness label significantly and positively influences forgo exercise intention. This effect may be explained by the cognitive control theory, the halo effect, and goal progress. The cognitive control theory suggests that this effect is due to the activation of people's cognitive control system. The activation of the cognitive control system enhances resolution of a subsequent similar response conflict frustrates the resolution of a subsequent different response conflict. Therefore, if the cognitive control system is playing a role, when a respondent is exposed to two consecutive food choices and an exercise decision, the respondent's second food choice should be consistent with his/her first food choice, but his/her exercise decision should be inconsistent with his/her food choices.

The halo effect and goal progress allow people to rationalize their indulgent behaviors through different routes: positive bias and progress achieved correspondingly. If these routes contributed to the higher forgo exercise intention observed in study 3, they should be able to result in another goal inconsistent food choice.

Based on the above analysis, the first step is trying to rule out the cognitive control theory. Study 4 adds a food choice scenario and question immediately after the food choice scenario used in study 3, the new food choice scenario and question is placed before the forgo exercise questions (Appendix D). If there is a significantly larger number of respondents in fitness label condition choose healthy food, then the cognitive control theory rather than other theories is more likely to explain the phenomenon. Otherwise we will be able to rule out the cognitive control theory.

Study 4 continues the two-scenario experimental design. The first section of the scenario describes a response conflict encountered by a hypothetical college student; this section is exactly the same as the description used in study 3. This design ensures that the response conflict used for study 3 and study 4 is exactly the same.

In addition to that, scenarios in study 4 add a new paragraph describing another food choice conflict encountered by the hypothetical student immediately after her first food choice. This paragraph is adapted from Dewitte et al., (2009). It describes a situation when the hypothetical student needs to choose from a fruit salad and an ice cream. A fruit salad is generally believed to be healthier than an ice cream. Study 4 uses the same survey structure, measures, manipulation check questions and attention check question as those used in study 1, study 2 and study 3.

7.2. Procedure

A total of 125 participants on SurveyMonkey completed study 4 survey for \$2 compensation. Same with study 1, study 2, and study 3, all respondents were told that the research interests is consumers' lifestyles and wellbeing. Respondents were told that the survey takes about 10 minutes to complete, it requires them to read a scenario about a college student's choice, subsequent questions would be based on the scenario. Then they proceeded to complete questions about their demographic information before reading the scenario.

The data screening process eliminated 9 responses, making the total number of valid responses 116 (female= 69%, $M_{age}= 41.44$, $SD_{age}= 12.372$). The descriptive statistics of all participants in study 4 is demonstrated in Table 20. Participants in the fitness label condition and regular food condition are not significantly different in terms of their age, gender, exercise frequency, and exercise intensity.

Table 20

Descriptive Statistics of Participants in Study 4

	Fitness Label Condition (N=50)	Regular Food Condition (N=66)
Demographics		
Age	$M_{age}=39.2$ (18 - 65 years)	$M_{age}=43.1$ (18 - 65 years)
Female	62%	58%
Personal Characteristics		
Exercise Frequency	$M_{frequency}=3.82$ day/week	$M_{frequency}=3.85$ day/week
Exercise Intensity	$M_{intensity}=3.44$	$M_{intensity}=3.20$

7.3. Results

The purpose of study 4 is to explore whether it is the cognitive control theory, halo effect or the goal research that explains the higher forgo exercise intention after choosing fitness labeled food. Study 4 also aims to answer the question that whether choosing fitness labeled food encourages more healthy food choices or encourages more indulgent food choices.

First of all, a Chi Square Test of Independence is conducted to examine if the second food choice (choosing fruit salad vs. choosing ice cream) is independent of the first food choice (choosing fitness labeled energy bar vs. choosing non-fitness labeled energy bar). The Pearson Chi-Square value is insignificant ($p > .05$, ns). The result indicates that consumer's second food choice is independent of the first food choice. There are more than 80% of respondents in both fitness energy bar condition and non-fitness energy bar condition chose fruit salad over ice cream. Suggesting that choosing fitness labeled food does not increase subsequent indulgent food choice. This result also suggests that neither a halo effect nor a goal progress illusion was produced by choosing fitness labeled energy bar, since participants did not exhibit more tendency towards an immediate indulgent behavior.

A one-way ANOVA is conducted to compare the mean values of intention to forgo exercise. Fitness labeled energy bar condition exhibits significantly higher intention to forgo exercise ($M_{\text{Fitness}}=3.58$, $SEM_{\text{Fitness}}=.254$; $M_{\text{Non-Fitness}}=2.94$, $SEM_{\text{Non-Fitness}}=.191$, $t=2.053$, $p < 0.05$, $d=.385$). This result is consistent with the findings of study 3, suggesting that when there is a strong response conflict, choosing fitness labeled food increases intention to forgo exercise. This result shows that consumers demonstrate two consecutive goal-consistent food choices and one goal-inconsistent exercise decision, which is in line with the prediction of cognitive control theory. Nevertheless, since the mean values of forgo exercise intention in both conditions are

lower than 4, consistent with findings in study 3, despite the positive effect of choosing fitness labeled food on forgo exercise intention, generally respondents in both conditions disagree with forgoing exercise.

To understand if the interplay of the two food choices may affect forgo exercise intention, a two-way ANOVA is conducted. The result is insignificant ($p > .05$, *ns*).

A linear regression result is conducted to examine self-control and fitness label's impact on forgo exercise intention. Self-control (Beta=-.414, $t = -4.925$, $p = .000$) and fitness label (Beta=.215, $t = 2.555$, $p = .012$) collectively explain 19.2% of forgo exercise's variation. This result is consistent with H₃ and H₄.

7.4. Discussion

The purpose of study 4 is two-fold: extends study 3 to answer which theory explains significantly higher intention to forgo exercise in fitness food condition; and explores how choosing fitness labeled food affects subsequent food choice.

Study 4 presents respondents three consecutive response conflicts, the first 2 response conflicts are the same kind (choosing food), following a third different response conflict (exercise). The result shows respondents demonstrate a goal-consistent intention (choosing fruit salad) in the second response conflict, and an increase of a goal inconsistent tendency (forgoing exercise) in the third response conflict. Specifically, result shows that in both fitness and regular conditions, more than 80% of respondents chose fruit salad over ice cream, respondents do not exhibit any differences in the second food choice. This finding along with findings in study 3 suggest that cognitive control theory is more likely to be the mechanism that explains higher forgo exercise intention in fitness condition. As explained earlier, cognitive control theory

suggests an increased ability to overcome a second response conflict when the two response conflicts are the same, it also suggests a decreased ability to overcome a second response conflict when the two response conflicts are different. Whereas the halo effect and goal progress suggest an indulgent decision after an initial strong response conflict, which is not observed in study 4. Therefore, we can rule out the halo effect and goal progress, and suggest that it is the cognitive control theory that explains the increase in forgo exercise intention in the fitness label condition. And choosing fitness labeled food does not produce any negative effects in subsequent food choice.

CHAPTER VIII

DISCUSSION, IMPLICATION, LIMITATION, AND FUTURE DIRECTION

8.1. Discussion

This dissertation aims to understand the meaning of fitness label to consumers, and to explore the effect of choosing fitness labeled food on consumer's subsequent forgo exercise intention. This research purpose is guided by three research questions. A summary of the main findings is demonstrated in Table 21.

8.1.1. Findings for RQ1

RQ1: What does “fitness” mean and what does “fitness labeled food” mean to consumers?

An independent preliminary study with two open-ended survey questions is conducted to explore RQ1. The procedures and results are explained in section 3.3 and Table 7. Participants associate the word “fitness” with 1) being healthy; 2) being healthy and having a good body shape; 3) release stress and feel good; 4) to be physically active; and 5) quality of life.

Participants tend to associate fitness label with 1) worse taste; 2) boost energy; 3) support weight control; 4) improve body shape; 5) support health; 6) better or healthier ingredients; 7) higher price; 8) increase positive emotion; 9) low calorie; 10) pure marketing; and 11) moderation.

8.1.2. Findings for RQ2

RQ2: When there is no response conflict in food choice, how does choosing fitness labeled food affect consumer's subsequent forgo exercise intention?

Study 1 is conducted to explore RQ2. The result shows that when there is no response conflict in food choice, choosing fitness labeled food does not affect subsequent exercise intention. This result is consistent with our predictions. Moreover, participant's self-control significantly and negatively affects their intention to forgo exercise. This is consistent with the predictions generated from the depletion theory and the cognitive control theory. Furthermore, study 1 observes a health halo produced by fitness label, yet the health halo does not lead to a halo effect that increases people's intention to forgo exercise.

8.1.3. Findings for RQ3

RQ3: When there is a response conflict in food choice, how does choosing fitness labeled food affect consumer's subsequent forgo exercise intention?

Study 2, study 3 and study 4 are conducted to explore RQ3. The dissertation first employs a study 2 with a mild response conflict involved in food choice. Scenarios in study 2 imply that choosing fitness labeled food requires a sacrifice in taste. The result shows that when there is a mild response conflict in food choice, choosing fitness labeled food has a significant and negative impact on intention to forgo exercise, but this effect is only present among participants whose BMI falls within the normal range. This result is consistent with the prediction generated from research about goal commitment. A health halo is not observed in study 2, which also suggests that the activation of goal commitment is most likely to explain the phenomenon. Moreover, participant's self-control significantly and negatively affects their

intention to forgo exercise. This is predicted by the depletion theory and the cognitive control theory.

Following the results of study 2, study 3 is conducted to answer a further question: by increasing the magnitude of response conflict, will the reinforced response conflict turn the negative impact of fitness label on forgo exercise to positive? This conjecture is reasonable since all four theories and models support this supposition. Scenarios in study 3 enhance the magnitude of response conflict by emphasizing the trade-offs between two food choices. The result shows that when there is a strong response conflict in food choice, choosing fitness labeled food significantly increases intention to forgo exercise. Consistent with our speculation, the negative impact of fitness label on forgo exercise becomes positive. It is interesting to note that despite the positive impact on forgo exercise intention, participants generally disagree with forgoing exercise. This is evidenced in their low assigned values to forgo exercise. This result rules out depletion theory as a possible explanation. There are three theories that may explain the phenomenon: the cognitive control theory, the halo effect, and goal progress.

Study 4 is conducted to investigate which of the three theories explain the phenomenon observed in study 3. By employing two food choice response conflicts and an exercise response conflict in the scenarios, study 4 finds that the first food choice conflict (choosing fitness labeled vs. non-fitness labeled food) does not affect subsequent food choice conflict (choosing fruit salad vs. choosing ice cream). This finding suggests that choosing fitness labeled food may not produce a halo effect nor an attention on goal progress. Study 4 also finds that participants in fitness condition have a significantly higher intention to forgo exercise. This finding along with previous finding about food choice conflict suggest that when halo effect and attention on goal

progress is absent, choosing fitness labeled food can still exert a positive effect on forgo exercise intention. Cognitive control system is the most plausible explanation.

Table 21

Summary of Statistic Results

Hypotheses	Description	Results
H ₁	when no response conflict is involved in food choice, choosing fitness labeled food significantly and positively affects consumer's intention to forgo exercise.	Not supported in Study 1
H ₂	when a mild response conflict is involved in food choice, choosing fitness labeled food significantly and negatively affects consumer's intention to forgo exercise.	Partially supported in Study 2
H ₃	when a strong response conflict is involved in food choice, choosing fitness labeled food significantly and positively affects consumer's intention to forgo exercise.	Supported in Study 3 and Study 4
H ₄	Self-control significantly and negatively affects intention to forgo exercise.	Supported in Study 1-4

8.2. Theoretical and Managerial Implications

This dissertation has at least three important theoretical implications. First of all, this dissertation integrates the concept of response conflict in the study of fitness labels, which provides solid foundation for future studies. Brown et al. (2018) suggest that results of persuasive language label studies lack consistency. This dissertation suggests that the inconsistency stems from the negligence of response conflicts involved in decisions. When response conflict is absent, consumer's decisions are made more randomly. Yet when response conflict is present, overcoming different levels of response conflict requires consumers to exhibit different levels of self-control, effort, or even activating their cognitive control system in order to

make goal-consistent decisions. For that reason, the severity of response conflict involved in initial decision will determine the activation of different reaction mechanism. And the different activated reaction mechanism will in turn affect subsequent decisions differently. By discussing the role of response conflict in influencing consumer's goal consistent behavior, this dissertation sets a solid foundation for future studies that aim to understand persuasive label's impacts.

Second, by setting different levels of response conflict, this dissertation is able to further discuss the theoretical basis of fitness label's impacts under different response conflict levels. As explained earlier, different response conflicts will activate consumer's different reaction mechanisms. Previous literature mainly discusses how consumer react to persuasive language labels. Failing to consider the role of response conflict constrains their ability to explain the phenomenon. By integrating the concept of response conflict, this dissertation is one of a few studies that is able to provide possible theoretical framework to explain consumer's differential reaction mechanisms.

Lastly, this dissertation answers a critical marketing question: whether the use of fitness label will produce negative influence on consumer's health. Our answer to this question is negative. The four studies of this dissertation explore the potential impacts of fitness label on forgo exercise intention under different response conflict levels. Our result shows that fitness label produces positive effect on forgo exercise intention only when the response conflict is strong. However, the effect is very small, most consumers still intend to continue their regular exercise even under this condition. People's self-control capacity has very positive impact on their exercise intention.

This dissertation also has very important managerial implications. It answers a question raised at the beginning of this dissertation: whether fitness label should be discontinued as a

marketing technique? This dissertation suggests that fitness label can be used. Three reasons support this suggestion and provides three implications. First of all, the influence of fitness label is determined by the response conflict involved in food choices and other health-related choices. When choosing fitness labeled food does not result in any response conflicts, the influence of fitness label is very small. Therefore, an important implication is business practitioners need to do their best to reduce the chances of response conflict, such as improving food tastes.

Moreover, this dissertation finds that fitness label is beneficial for goal-consistent decision when there is a mild response conflict involved in food choice. This beneficial influence can become negative as the magnitude of response conflict increases. Therefore, for practitioners, it is crucial to understand the most important product attributes that affect consumer's choices. Business practitioners need to make sure that fitness labeled food perform well on these most important attributes. In the meanwhile, business practitioners can lower their criterions on less important food attributes. By lowering criterions for less important attributes, companies can not only save money, but also exert positive influence on consumers.

Last but not least, it is important for fitness labeled food producers to establish loyalty programs with customers. Consumers who frequently purchase fitness labeled food will face a decreasing level of response conflict. By establishing loyalty programs to encourage habitual purchase, companies can reduce the chance of exerting negative influence on consumers.

8.3. Limitations and Future Direction

This dissertation has several limitations that also suggests good future directions. First of all, running scenario-based experiments alone cannot observe how participants react to more realistic environment. Survey-based experiments allow participants to consider the question from

a third person's perspective, this research design helps to understand participant's cognitive analysis of the issue. Participants rely on their rational considerations to make decisions. However, in everyday life, people's decisions could be irrational. Their decisions are also subject to emotional reactions and other unexpected situations. For that reason, it is not only necessary but also imperative to reexamine the results of this dissertation using different experimental designs. However, given the current impact of COVID-19 and the requirements of social distancing, conducting in person experiments is almost impossible. Therefore, using in-person experiments to reexamine the results of this dissertation becomes an important direction for future studies.

Second, this dissertation has not directly examined the role of suggested theories in explaining participants' reactions. This dissertation studies participant's reaction mechanism through analyzing existing studies, proposing possible theoretical explanations, excluding theories that produce predictions that are inconsistent with study results, and then suggests the most possible theoretical explanation. This approach helps to narrow down the research area for future studies, but it cannot provide direct evidence for the role of suggested theories in influencing participant's reactions. For that reason, investigating the role of suggested theories in influencing participant's reactions through experimental verification becomes a second important direction for future studies.

Moreover, this dissertation utilizes "perceived taste" as a factor to manipulate different levels of response conflict. The theoretical basis for this design is the fact that taste plays a major role in influencing consumer's food choice, this fact is evidenced provided by research studies. However, there should be other factors that can result in response conflicts, such as prices, perceived efforts to get the food, peer influence etc. This dissertation has not discussed these

factors yet, and investigating response conflicts generated by these factors could become an interesting topic for future studies.

Lastly, both study 3 and study 4 find evidence that when response conflict is strong, fitness label significantly increases participant's forgo exercise intention. However, according to study results, it is clear that participants in study 4 have demonstrated slightly higher general intention to forgo exercise than participants in study 3. This dissertation assumes this difference is generated by adding another response conflict in study 4, and does not discuss in depth the cause of this difference. It can become a good discussion topic for future studies.

REFERENCES

- Aarts, Henk, and Ap Dijksterhuis (2003), "The Silence of the Library: Environment, Situational Norm, and Social Behavior," *Journal of Personality and Social Psychology*, 84(1), 18.
- Ajzen, Icek (1991), "The Theory of Planned Behavior," *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Allison, Ralph I., and Kenneth P. Uhl (1964), "Influence of Beer Brand Identification on Taste Perception," *Journal of Marketing Research*, 1(3), 36-39.
- Amos, Clinton, James C. Hansen and Skyler King (2019), "All-natural Versus Organic: Are the Labels Equivalent in Consumers' Minds?," *Journal of Consumer Marketing*, 36(4), 516-526.
- Andreyeva, Tatiana, Michael W. Long, and Kelly D. Brownell (2010), "The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food," *American Journal of Public Health*, 100(2), 216-222.
- Anker, Thomas Boysen, Peter Sandøe, Tanja Kamin, and Klemens Kappel (2011), "Health Branding Ethics," *Journal of Business Ethics*, 104(1), 33.
- Asch, Solomon E. (1946), "Forming Impressions of Personality," *The Journal of Abnormal and Social Psychology*, 41(3), 258.
- Bandura, Albert (1991), "Social Cognitive Theory of Self-regulation," *Organizational Behavior and Human Decision Processes*, 50(2), 248-287.
- Bargh, John A., Mark Chen, and Lara Burrow (1996), "Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action," *Journal of personality and social psychology*, 71(2), 230.
- Baumeister, Roy F., Ellen Bratslavsky, Mark Muraven, and Dianne M. Tice (1998), "Ego Depletion: Is the Active Self a Limited Resource?" *Journal of Personality and Social Psychology*, 74(5), 1252.
- Baumeister, Roy F., and Julie Exline J. (2000), "Self-control, Morality, and Human Strength," *Journal of Social and Clinical Psychology*, 19(1), 29-42.

- Besson, Théo, Hugo Bouxom, and Thibault Jaubert (2020), “Halo It’s Meat! the Effect of the Vegetarian Label on Calorie Perception and Food Choices,” *Ecology of food and nutrition*, 59(1), 3-20.
- Besson, Theo, Fanny Lalot, Nicolas Bochar, Valentin Flaudias, and Oulmann Zerhouni (2019), “The Calories Underestimation of “Organic” Food: Exploring the Impact of Implicit Evaluations,” *Appetite*, 137, 134-144.
- Boh, Bastiaan, Anita Jansen, Ineke Clijsters, Chantal Nederkoorn, Lotte HJM Lemmens, Gerasimos Spanakis, and Anne Roefs (2016), “Indulgent Thinking? Ecological Momentary Assessment of Overweight and Healthy-weight Participants' Cognitions and Emotions,” *Behaviour Research and Therapy*, 87, 196-206.
- Boon, Caitlin S., Alice H. Lichtenstein, and Ellen A. Wartella, (Eds.) (2010), “Front-of-package Nutrition Rating Systems and Symbols: Phase I Report,” *National Academies Press*.
- Botvinick, Matthew M., Todd S. Braver, Deanna M. Barch, Cameron S. Carter, and Jonathan D. Cohen (2001), “Conflict Monitoring and Cognitive Control,” *Psychological Review*, 108(3), 624.
- Braun-LaTour, Kathryn A., and Michael S. LaTour (2005), “Transforming Consumer Experience: When Timing Matters,” *Journal of Advertising*, 34(3), 19-30.
- Brown, Hannah M., Megan E. Rollo, Nienke M. de Vlieger, Clare E. Collins, and Tamara Bucher (2018), “Influence of the Nutrition and Health Information Presented on Food Labels on Portion Size Consumed: A Systematic Review,” *Nutrition Reviews*, 76(9), 655-677.
- Campos, Sarah, Juliana Doxey, and David Hammond (2011), “Nutrition Labels on Pre-packaged Foods: A Systematic Review,” *Public Health Nutrition*, 14(8), 1496-1506.
- Carter, Evan C., Lilly M. Kofler, Daniel E. Forster, and Michael E. McCullough (2015), “A Series of Meta-analytic Tests of the Depletion Effect: Self-control Does Not Seem to Rely on A Limited Resource,” *Journal of Experimental Psychology: General*, 144(4), 796.
- Cavaliere, Alessia, Elena Claire Ricci, and Alessandro Banterle (2015), “Nutrition and Health Claims: Who is Interested? An Empirical Analysis of Consumer Preferences in Italy,” *Food Quality and Preference*, 41, 44-51.
- Cavanagh, Kevin V., Blina Kruja, and Catherine A. Forestell (2014), “The Effect of Brand and Caloric Information on Flavor Perception and Food Consumption in Restrained and Unrestrained Eaters,” *Appetite*, 82, 1-7.
- Chandon, Pierre, and Brian Wansink (2007), “The Biasing Health Halos of Fast-food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-dish Consumption Intentions,” *Journal of Consumer Research*, 34(3), 301-314.

- Chandon, Pierre, and Brian Wansink (2012), "Does Food Marketing Need to Make Us Fat? A Review and Solutions," *Nutrition Reviews*, 70(10), 571-593.
- Chen, Ming-Yi (2016), "Who Will Make An Indulgent Food Choice After Having Fulfilled Their Healthy Eating Goal?," *International Journal of Consumer Studies*, 40(3), 379-384.
- Chernev, Alexander (2011), "The Dieter's Paradox," *Journal of Consumer Psychology*, 21(2), 178-183.
- Chrysochou, Polymeros, and Klaus G. Grunert (2014), "Health-related Ad Information and Health Motivation Effects on Product Evaluations," *Journal of Business Research*, 67(6), 1209-1217.
- Conway, Paul, and Johanna Peetz (2012), "When Does Feeling Moral Actually Make You a Better Person? Conceptual Abstraction Moderates Whether Past Moral Deeds Motivate Consistency or Compensatory Behavior," *Personality and Social Psychology Bulletin*, 38(7), 907-919.
- Dalleck, Lance C., and Len Kravitz (2002), "The history of Fitness," *IDEA Health and Fitness Source*, 20(2), 26-33.
- Deci, Edward L., and Richard M. Ryan (1980), "Self-determination Theory: When Mind Mediates Behavior," *The Journal of Mind and Behavior*, 33-43.
- Deighton-Smith, Nova, and Beth T. Bell (2018), "Objectifying Fitness: A Content and Thematic Analysis of #fitspiration Images on Social Media," *Psychology of Popular Media Culture*, 7(4), 467.
- De Ridder, Denise, Marieke Adriaanse, Catharine Evers, and Aukje Verhoeven (2014), "Who Diets? Most People and Especially When They Worry About Food," *Appetite*, 80, 103-108.
- Dewitte, Siegfried, Sabrina Bruyneel, and Kelly Geyskens (2009), "Self-regulating Enhances Self-regulation in Subsequent Consumer Decisions Involving Similar Response Conflicts," *Journal of Consumer Research*, 36(3), 394-405.
- De Witt Huberts, Jessie C., Catharine Evers, and Denise TD De Ridder (2012), "License to Sin: Self-licensing As A Mechanism Underlying Hedonic Consumption," *European Journal of Social Psychology*, 42(4), 490-496.
- Dhar, Ravi, and Itamar Simonson (1999), "Making Complementary Choices in Consumption Episodes: Highlighting Versus Balancing," *Journal of Marketing Research*, 36(1), 29-44.
- Dion, Karen, Ellen Berscheid, and Elaine Walster (1972), "What is Beautiful is Good," *Journal of Personality and Social Psychology*, 24(3), 285.

- Dobosiewicz, Anna Maria, Ewelina Litwa, Gracjan Róžański, and Natalia Badiuk (2018), "The Importance of Physical Activity in Obesity," *Journal of Education, Health and Sport*, 8(10), 474-483.
- Dohnt, Hayley K., and Marika Tiggemann (2006), "Body Image Concerns in Young Girls: The Role of Peers and Media Prior to Adolescence," *Journal of Youth and Adolescence*, 35(2), 135.
- Dominick, S. R., Chelsea Fullerton, Nicole J. Olynk Widmar, and Holly Wang (2018), "Consumer Associations with the "All Natural" Food Label," *Journal of Food Products Marketing*, 24(3), 249-262.
- Ebner, Daria S., Janet D. Latner, and Claudio R. Nigg (2013), "Is Less Always More? The Effects of Low-fat Labeling and Caloric Information on Food Intake, Calorie Estimates, Taste Preference, and Health Attributions," *Appetite*, 68, 92-97.
- Egli, Trevor, Helen W. Bland, Bridget F. Melton, and Daniel R. Czech (2011), "Influence of Age, Sex, and Race on College Students' Exercise Motivation of Physical Activity," *Journal of American College Health*, 59(5), 399-406.
- Ein-Gar, Danit, and Yael Steinhart (2011), "The 'Sprinter effect': When Self-control and Involvement Stand in the Way of Sequential Performance," *Journal of Consumer Psychology*, 21(3), 240-255.
- Esposito, Gabriele, René van Bavel, Tom Baranowski, and Néstor Duch-Brown (2016), "Applying the Model of Goal-directed Behavior, Including Descriptive Norms, to Physical Activity Intentions: A Contribution to Improving the Theory of Planned Behavior," *Psychological Reports*, 119(1), 5-26.
- Featherstone, Mike (1982), "The Body in Consumer Culture," *Theory, Culture & Society*, 1(2), 18-33.
- Fedoroff, Ingrid DC, Janet Polivy, and C. Peter Herman (1997), "The Effect of Pre-exposure to Food Cues on the Eating Behavior of Restrained and Unrestrained Eaters," *Appetite*, 28(1), 33-47.
- Finkelstein, Stacey R., and Ayelet Fishbach (2010), "When Healthy Food Makes You Hungry," *Journal of Consumer Research*, 37(3), 357-367.
- Fishbach, Ayelet, and Ravi Dhar (2005), "Goals as Excuses or Guides: The Liberating Effect of Perceived Goal Progress on Choice," *Journal of Consumer Research*, 32(3), 370-377.
- Fishbach, Ayelet, Ronald S. Friedman, and Arie W. Kruglanski (2003), "Leading Us Not into Temptation: Momentary Allurements Elicit Overriding Goal Activation," *Journal of Personality and Social Psychology*, 84(2), 296.
- Fisher, Geoffrey (2018), "Nutrition Labeling Reduces Valuations of Food Through Multiple Health and Taste Channels," *Appetite*, 120, 500-504.

- Fitzsimons, Gráinne M., Tanya L. Chartrand, and Gavan J. Fitzsimons (2008), "Automatic Effects of Brand Exposure on Motivated Behavior: How Apple Makes You 'Think Different'," *Journal of Consumer Research*, 35(1), 21-35.
- Foreyt, John P., and G. Ken Goodrick (1995), "Living Without Dieting: Motivating the Obese to Exercise and to Eat Prudently," *Quest*, 47(3), 263-273.
- Förster, Jens, Nira Liberman, and Ronald S. Friedman (2007), "Seven Principles of Goal Activation: A Systematic Approach to Distinguishing Goal Priming from Priming of Non-goal Constructs," *Personality and Social Psychology Review*, 11(3), 211-233.
- Fredrickson, Barbara L., and Tomi-Ann Roberts (1997), "Objectification Theory: Toward Understanding Women's Lived Experiences and Mental Health Risks," *Psychology of Women Quarterly*, 21(2), 173-206.
- Freeman, Richard PJ, and David A. Booth (2010), "Users of 'Diet' Drinks Who Think That Sweetness is Calories," *Appetite*, 55(1), 152-155.
- Giacobbi Jr, Peter, Karen A. Dreisbach, Nicole M. Thurlow, Payal Anand, and Francisco Garcia (2014), "Mental Imagery Increases Self-Determined Motivation to Exercise with University Enrolled Women: A Randomized Controlled Trial Using a Peer-based Intervention," *Psychology of Sport and Exercise*, 15(4), 374-381.
- González-Cutre, David, and Álvaro Sicilia (2012), "Motivation and Exercise Dependence: A Study Based on Self-determination Theory," *Research Quarterly for Exercise and Sport*, 83(2), 318-329.
- Gravel, Karine, Éric Doucet, C. Peter Herman, Sonia Pomerleau, Anne-Sophie Bourlaud, and Véronique Provencher (2012), "'Healthy,' 'Diet,' or 'Hedonic'. How Nutrition Claims Affect Food-related Perceptions and Intake?," *Appetite*, 59(3), 877-884.
- Guay, Frédéric, Geneviève A. Mageau, and Robert J. Vallerand (2003), "On the Hierarchical Structure of Self-determined Motivation: A Test of Top-down, Bottom-up, Reciprocal, and Horizontal Effects," *Personality and Social Psychology Bulletin*, 29(8), 992-1004.
- Hair, Joseph F., Rolph E. Anderson, Barry J. Babin, and William C. Black (2010), "Multivariate Data Analysis: A Global Perspective (Vol. 7)".
- Hofmann, Wilhelm, Wolfgang Rauch, and Bertram Gawronski (2007), "And Deplete Us Not into Temptation: Automatic Attitudes, Dietary Restraint, and Self-regulatory Resources as Determinants of Eating Behavior," *Journal of Experimental Social Psychology*, 43(3), 497-504.
- Horgen, Katherine Battle, and Kelly D. Brownell (1998), "Policy Change as A Means for Reducing the Prevalence and Impact of Alcoholism, Smoking, and Obesity," N-Volume-Issue-Page.

- Huang, Yunhui, and Jaideep Sengupta (2020), "The Influence of Disease Cues on Preference for Typical Versus Atypical Products," *Journal of Consumer Research*, 47(3), 393-411.
- Irmak, Caglar, Beth Vallen, and Stefanie Rosen Robinson (2011), "The Impact of Product Name on Dieters' and Nondieters' Food Evaluations and Consumption," *Journal of Consumer Research*, 38(2), 390-405.
- Jeong, Hyo-Jin, and Dong-Mo Koo (2015), "Volunteering as A Mechanism to Reduce Guilt Over Purchasing Luxury Items," *Journal of Product & Brand Management*, 24(7), 758-769.
- Kahan, Dana, Janet Polivy, and C. Peter Herman (2003), "Conformity and Dietary Disinhibition: A Test of the Ego-strength Model of Self-regulation," *International Journal of Eating Disorders*, 33(2), 165-171.
- Kaur, Asha, Peter Scarborough, and Mike Rayner (2017), "A Systematic Review, and Meta-Analyses, of the Impact of Health-related Claims on Dietary Choices," *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), 1-17.
- Kerner, M. S., and A. H. Grossman (2001), "Scale Construction for Measuring Attitude, Beliefs, Perception of Control, and Intention to Exercise," *Journal of Sports Medicine and Physical Fitness*, 41(1), 124.
- Khan, Uzma, and Ravi Dhar (2006), "Licensing Effect in Consumer Choice," *Journal of Marketing Research*, 43(2), 259-266.
- Kivetz, Ran, and Anat Keinan (2006), "Repenting Hyperopia: An Analysis of Self-control Regrets," *Journal of Consumer Research*, 33(2), 273-282.
- Kivetz, Ran, and Itamar Simonson (2002), "Earning the Right to Indulge: Effort as a Determinant of Customer Preferences Toward Frequency Program Rewards," *Journal of Marketing Research*, 39(2), 155-170.
- Kivetz, Ran, and Yuhuang Zheng (2006), "Determinants of Justification and Self-control," *Journal of Experimental Psychology: General*, 135(4), 572.
- Knight, Linda J., and Fred J. Boland (1989), "Restrained Eating: An Experimental Disentanglement of the Disinhibiting Variables of Perceived Calories and Food Type," *Journal of Abnormal Psychology*, 98(4), 412.
- Koch, Alexander K., and Julia Nafziger (2011), "Self-regulation Through Goal Setting," *Scandinavian Journal of Economics*, 113(1), 212-227.
- Koenigstorfer, Joerg, and Hans Baumgartner (2016), "The Effect of Fitness Branding on Restrained Eaters' Food Consumption and Postconsumption Physical Activity," *Journal of Marketing Research*, 53(1), 124-138.

- Koenigstorfer, Joerg, Andrea Groeppel-Klein, Myriam Kettenbaum, and Kristina Klicker (2013), "Eat Fit. Get Big? How Fitness Cues Influence Food Consumption Volumes," *Appetite*, 65, 165-169.
- König, Laura M., Helge Giese, F. Marijn Stok, and Britta Renner (2017), "The Social Image of Food: Associations Between Popularity and Eating Behavior," *Appetite*, 114, 248-258.
- Koo, Minjung, and Ayelet Fishbach (2014), "Dynamics of Self-regulation: How (Un) Accomplished Goal Actions Affect Motivation" *Motivation Science*, 1(s), 73-90.
- Kouchaki, Maryam, and Ata Jami (2018), "Everything We Do, You Do: The Licensing Effect of Prosocial Marketing Messages on Consumer Behavior," *Management Science*, 64(1), 102-111.
- Kuhl, Julius (1992), "A Theory of Self-regulation: Action Versus State Orientation, Self-discrimination, and Some Applications," *Applied Psychology*, 41(2), 97-129.
- Kwan, Bethany M., Angela D. Bryan, and Paschal Sheeran (2018), "The Dynamics of Success and Failure: How Post-behaviour Evaluations Relate to Subsequent Exercise Intentions and Behaviour," *Psychology & Health*, 33(7), 888-905.
- Lalor, Fiona, Ciara Madden, Kenneth McKenzie, and Patrick G. Wall (2011), "Health Claims on Foodstuffs: A Focus Group Study of Consumer Attitudes," *Journal of Functional Foods*, 3(1), 56-59.
- Laran, Juliano (2009), "Choosing Your Future: Temporal Distance and the Balance Between Self-control and Indulgence," *Journal of Consumer Research*, 36(6), 1002-1015.
- Lee, Keunchul, and Kanghun Lee (2020), "Relationship of Friend/Parent Exercise Participation Levels and Adolescents' Exercise Intention/Behavior as Moderated by Action Control," *Perceptual and Motor Skills*, 127(2), 347-366.
- Litt, Ab, and Baba Shiv (2012), "Manipulating Basic Taste Perception to Explore How Product Information Affects Experience," *Journal of Consumer Psychology*, 22(1), 55-66.
- Mai, Robert, and Stefan Hoffmann (2015), "How to Combat the Unhealthy= Tasty Intuition: The Influencing Role of Health Consciousness," *Journal of Public Policy & Marketing*, 34(1), 63-83.
- Mann, Traci, and Andrew Ward (2007), "Attention, Self-control, and Health Behaviors," *Current Directions in Psychological Science*, 16(5), 280-283.
- Matson-Koffman, Dyann M., J. Nell Brownstein, Jennifer A. Neiner, and Mary L. Greaney (2005), "A Site-specific Literature Review of Policy and Environmental Interventions that Promote Physical Activity and Nutrition for Cardiovascular Health: What Works?" *American Journal of Health Promotion*, 19(3), 167-193.

- Mazar, Nina, and Chen-Bo Zhong (2010), "Do Green Products Make Us Better People?" *Psychological Science*, 21(4), 494-498.
- McClure, Samuel M., Jian Li, Damon Tomlin, Kim S. Cypert, Latané M. Montague, and P. Read Montague (2004), "Neural Correlates of Behavioral Preference for Culturally Familiar Drinks," *Neuron*, 44(2), 379-387.
- Migliore, Giuseppina, Massimiliano Borrello, Alessia Lombardi, and Giorgio Schifani (2018), "Consumers' Willingness to Pay for Natural Food: Evidence from an Artefactual Field Experiment," *Agricultural and Food Economics*, 6(1), 21.
- Miklavec, Krista, Igor Pravst, Klaus G. Grunert, Marija Klopčič, and Jure Pohar (2015), "The Influence of Health Claims and Nutritional Composition on Consumers' Yoghurt Preferences," *Food Quality and Preference*, 43, 26-33.
- Mukhopadhyay, Anirban, and Gita Venkataramani Johar (2009), "Indulgence as Self-reward for Prior Shopping Restraint: A Justification-based Mechanism," *Journal of Consumer Psychology*, 19(3), 334-345.
- Muñoz-Vilches, Naomí C., Hans CM van Trijp, and Betina Piqueras-Fiszman (2019), "The Impact of Instructed Mental Simulation on Wanting and Choice Between Vice and Virtue Food Products," *Food Quality and Preference*, 73, 182-191.
- Muraven, Mark (2010), "Building Self-control Strength: Practicing Self-control Leads to Improved Self-control Performance," *Journal of Experimental Social Psychology*, 46(2), 465-468.
- Muraven, Mark, R. Lorraine Collins, and Kristen Neinhuis (2002), "Self-control and Alcohol Restraint: An Initial Application of the Self-control Strength Model," *Psychology of Addictive Behaviors*, 16(2), 113.
- Nisbett, Richard E., and Timothy D. Wilson (1977), "The Halo Effect: Evidence for Unconscious Alteration of Judgments," *Journal of Personality and Social Psychology*, 35(4), 250.
- Nitschke, Jack B., Gregory E. Dixon, Issidoros Sarinopoulos, Sarah J. Short, Jonathan D. Cohen, Edward E. Smith, Stephen M. Kosslyn, Robert M. Rose, and Richard J. Davidson (2006), "Altering Expectancy Dampens Neural Response to Aversive Taste in Primary Taste Cortex," *Nature Neuroscience*, 9(3), 435-442.
- Ogden, Jane, Chloe Wood, Elise Payne, Hollie Fouracre, and Frances Lammyman (2018), "'Snack' Versus 'Meal': The Impact of Label and Place on Food Intake," *Appetite*, 120, 666-672.
- Orquin, Jacob L., and Joachim Scholderer (2015), "Consumer Judgments of Explicit and Implied Health Claims on Foods: Misguided but Not Misled," *Food Policy*, 51, 144-157.

- Papies, Esther K. (2016), "Health Goal Priming as A Situated Intervention Tool: How to Benefit from Nonconscious Motivational Routes to Health Behaviour," *Health Psychology Review*, 10(4), 408-424.
- Papies, Esther K., and Petra Hamstra (2010), "Goal Priming and Eating Behavior: Enhancing Self-regulation by Environmental Cues," *Health Psychology*, 29(4), 384.
- Pelssers, Johan, Katrien Fransen, Norbert Vanbeselaere, and Filip Boen (2017), "The Effect of Descriptive Age Norms on the Motivation to Exercise Among Older Adults," *Health promotion international*, N-Volume-Issue-Page.
- Post, Robert E., Arch G. Mainous III, Vanessa A. Diaz, Eric M. Matheson, and Charles J. Everett (2010), "Use of the Nutrition Facts Label in Chronic Disease Management: Results From the National Health and Nutrition Examination Survey," *Journal of the American Dietetic Association*, 110(4), 628-632.
- Prada, Marília, David Rodrigues, and Margarida V. Garrido (2016), "Deliberate Choices or Strong Motives: Exploring the Mechanisms Underlying the Bias of Organic Claims on Leniency Judgments," *Appetite*, 103, 8-16.
- Prinsen, Sosja, Catharine Evers, Leoniek Wijngaards, Renée van Vliet, and Denise de Ridder (2018), "Does Self-licensing Benefit Self-regulation Over Time? An Ecological Momentary Assessment Study of Food Temptations," *Personality and Social Psychology Bulletin*, N-Volume-Issue-Page.
- Provencher, Véronique, Janet Polivy, and C. Peter Herman (2009), "Perceived Healthiness of Food. If It's Healthy, You Can Eat More!," *Appetite*, 52(2), 340-344.
- Rhodes, Ryan E., Tanya Berry, Guy Faulkner, Amy E. Latimer-Cheung, Norman O'Reilly, Mark S. Tremblay, Leigh Vanderloo, and John C. Spence (2019), "Application of the Multi-Process Action Control Framework to Understand Parental Support of Child and Youth Physical Activity, Sleep, and Screen Time Behaviours," *Applied Psychology: Health and Well-Being*, 11(2), 223-239.
- Ritland, Raeann, and Lulu Rodriguez (2014), "The Influence of Antiobesity Media Content on Intention to Eat Healthily and Exercise: A Test of the Ordered Protection Motivation Theory," *Journal of Obesity*, N-Volume-Issue-Page.
- Rodrigues, Filipe, Diogo Santos Teixeira, Henrique Pereira Neiva, Luís Cid, and Diogo Monteiro (2020), "The Bright and Dark Sides of Motivation as Predictors of Enjoyment, Intention, and Exercise Persistence," *Scandinavian Journal of Medicine & Science in Sports*, 30(4), 787-800.
- Roe, Brian, Alan S. Levy, and Brenda M. Derby (1999), "The Impact of Health Claims on Consumer Search and Product Evaluation Outcomes: Results from FDA Experimental Data," *Journal of Public Policy & Marketing*, 18(1) 89-105.

- Salgado-Garcia, Carlos, Amelia Jimenez-Heffernan, Juana Lopez-Martin, Manuela Molina-Mora, Tarik Aroui, Elena Sanchez De Mora, Carlos Ramos-Font, Francisco Rivera De Los Santos, and Carlos Ruiz-Frutos (2017), "Influence of Body Mass Index and Type of Low-level Exercise on the Side Effect Profile of Regadenoson," *European Journal of Nuclear Medicine and Molecular Imaging*, 44(11), 1906-1914.
- Schneider, Margaret L., and Bethany M. Kwan (2013), "Psychological Need Satisfaction, Intrinsic Motivation and Affective Response to Exercise in Adolescents," *Psychology of Sport and Exercise*, 14(5), 776-785.
- Schouteten, Joachim J., Xavier Gellynck, and Hendrik Slabbinck (2019), "Influence of Organic Labels on Consumer's Flavor Perception and Emotional Profiling: Comparison Between a Central Location Test and Home-use-test," *Food Research International*, 116, 1000-1009.
- Schuldt, Jonathon P. (2011), "Health Halo Effects of Values-based Food Claims (Doctoral dissertation)".
- Schuldt, Jonathon P. (2013). "Does Green Mean Healthy? Nutrition Label Color Affects Perceptions of Healthfulness," *Health Communication*, 28(8), 814-821.
- Schuldt, Jonathon P., Dominique Muller, and Norbert Schwarz (2012), "The 'Fair Trade' Effect: Health Halos from Social Ethics Claims," *Social Psychological and Personality Science*, 3(5), 581-589.
- Schuldt, Jonathon P., and Norbert Schwarz (2010), "The 'Organic' Path to Obesity? Organic Claims Influence Calorie Judgments and Exercise Recommendations," *Judgment and Decision Making*, 5(3), 144.
- Scott, Sydney E., Paul Rozin, and Deborah A. Small (2020), "Consumers Prefer 'Natural' More for Preventatives Than for Curatives," *Journal of Consumer Research*, 47(3), 454-471.
- Septianto, Felix (2017), "Work More and Indulge More: Exploring the Self-licensing Effect of Hard Work on Likelihood to Purchase Hedonic Products," *Journal of Retailing and Consumer Services*, 34, 235-239.
- Shah, James (2003), "Automatic for the People: How Representations of Significant Others Implicitly Affect Goal Pursuit," *Journal of Personality and Social Psychology*, 84(4), 661.
- Shim, Kyoung-Ran, Byung-Joo Paek, Ho-Taek Yi, and Jong-Ho Huh (2017), "Relationships between Golf Range Users' Participation Motivation, Satisfaction, and Exercise Adherence Intention," *Asia Pacific Journal of Innovation and Entrepreneurship*, N-Volume-Issue-Page.
- Smeesters, Dirk, Luk Warlop, Eddy Van Avermaet, Olivier Corneille, and Vincent Yzerbyt (2003), "Do Not Prime Hawks with Doves: The Interplay of Construct Activation and

- Consistency of Social Value Orientation on Cooperative Behavior,” *Journal of Personality and Social Psychology*, 84(5), 972.
- Soman, Dilip, and Amar Cheema (2004), “When Goals are Counterproductive: The Effects of Violation of a Behavioral Goal on Subsequent Performance,” *Journal of Consumer Research*, 31(1), 52-62.
- Spink, Kevin S., Kathleen S. Wilson, and Jason M. Bostick (2012), “Theory of Planned Behavior and Intention to Exercise: Effects of Setting,” *American Journal of Health Behavior*, 36(2), 254-264.
- Stanley, Damian M., Jennifer Cumming, Martyn Standage, and Joan L. Duda (2012), “Images of Exercising: Exploring the Links Between Exercise Imagery Use, Autonomous and Controlled Motivation to Exercise, and Exercise Intention and Behavior,” *Psychology of Sport and Exercise*, 13(2), 133-141.
- Steward, Barbara (2000), “Fit to Telework-The Changing Meaning of Fitness in New Forms of Employment,” *Advances in Physiotherapy*, 2(3), 103-111.
- Stroebe, Wolfgang, Wendy Mensink, Henk Aarts, Henk Schut, and Arie W. Kruglanski (2008), “Why Dieters Fail: Testing the Goal Conflict Model of Eating,” *Journal of Experimental Social Psychology*, 44(1), 26-36.
- Sütterlin, Bernadette, and Michael Siegrist (2015), “Simply Adding the Word “Fruit” Makes Sugar Healthier: The Misleading Effect of Symbolic Information on the Perceived Healthiness of Food,” *Appetite*, 95, 252-261.
- Sylvester, Benjamin D., Thomas Curran, Martyn Standage, Catherine M. Sabiston, and Mark R. Beauchamp (2018), “Predicting Exercise Motivation and Exercise Behavior: A Moderated Mediation Model Testing the Interaction Between Perceived Exercise Variety and Basic Psychological Needs Satisfaction,” *Psychology of Sport and Exercise*, 36, 50-56.
- Tangney, June P., Roy F. Baumeister, and Angie Luzio Boone (2004), “High Self-control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success,” *Journal of Personality*, 72(2), 271-324.
- Tanner, Sean A., Mary B. McCarthy, and Seamus J. O'Reilly (2019), “Exploring the Roles of Motivation and Cognition in Label-usage Using a Combined Eye-tracking and Retrospective Think Aloud Approach,” *Appetite*, 135, 146-158.
- Vadiveloo, Maya, Vicki Morwitz, and Pierre Chandon (2013), “The Interplay of Health Claims and Taste Importance on Food Consumption and Self-reported Satiety,” *Appetite*, 71, 349-356.
- van der Laan, Laura N., Esther K. Papiés, Ignace TC Hooge, and Paul AM Smeets (2017), “Goal-directed Visual Attention Drives Health Goal Priming: An Eye-tracking Experiment,” *Health Psychology*, 36(1), 82.

- Vanhees, Luc, Johan Lefevre, Renaat Philippaerts, Martine Martens, Wim Huygens, Thierry Troosters, and Gaston Beunen (2005), "How to Assess Physical Activity? How to Assess Physical Fitness?" *European Journal of Cardiovascular Prevention & Rehabilitation*, 12(2), 102-114.
- van Kleef, Ellen, Mitsuru Shimizu, and Brian Wansink (2011), "Food Compensation: Do Exercise Ads Change Food Intake?" *International Journal of Behavioral Nutrition and Physical Activity*, 8(1), 6.
- Van Koningsbruggen, Guido M., Wolfgang Stroebe, and Henk Aarts (2011), "Through the Eyes of Dieters: Biased Size Perception of Food Following Tempting Food Primes," *Journal of Experimental Social Psychology*, 47(2), 293-299.
- Van Osselaer, Stijn MJ, and Chris Janiszewski (2012), "A Goal-based Model of Product Evaluation and Choice," *Journal of Consumer Research*, 39(2), 260-292.
- Variyam, Jayachandran N. (2008), "Do Nutrition Labels Improve Dietary Outcomes?" *Health Economics*, 17(6), 695-708.
- Velasco, Carlos, Alejandro Salgado-Montejo, Fernando Marmolejo-Ramos, and Charles Spence (2014), "Predictive Packaging Design: Tasting Shapes, Typefaces, Names, and Sounds," *Food Quality and Preference*, 34, 88-95.
- Vohs, Kathleen D., and Todd F. Heatherton (2000), "Self-regulatory Failure: A Resource-Depletion Approach," *Psychological Science*, 11(3), 249-254.
- Wang, Biqi, Wenjing Gao, Jun Lv, Canqing Yu, Shengfeng Wang, Zengchang Pang, Liming Cong et al. (2016), "Physical Activity Attenuates Genetic Effects on BMI: Results from a Study of Chinese Adult Twins," *Obesity*, 24(3), 750-756.
- Wang, Qian, and Charles Spence (2018), "'A Sweet Smile': the Modulatory Role of Emotion in How Extrinsic Factors Influence Taste Evaluation," *Cognition and Emotion*, 32(5), 1052-1061.
- Wang, Yan, Lei Wang, Xianghua Cui, Yuan Fang, Qianqiu Chen, Ya Wang, and Yao Qiang (2015), "Eating on Impulse: Implicit Attitudes, Self-regulatory Resources, and Trait Self-control as Determinants of Food Consumption," *Eating Behaviors*, 19, 144-149.
- Wansink, Brian, and Pierre Chandon (2006), "Can 'Low-fat' Nutrition Labels Lead to Obesity?" *Journal of Marketing Research*, 43(4), 605-617.
- Wegman, Joost, Ilke van Loon, Paul AM Smeets, Roshan Cools, and Esther Aarts (2018), "Top-Down Expectation Effects of Food Labels on Motivation," *NeuroImage*, 173, 13-24.
- Weingarten, Evan, Qijia Chen, Maxwell McAdams, Jessica Yi, Justin Hepler, and Dolores Albarracín (2016), "From Primed Concepts to Action: A Meta-analysis of the Behavioral Effects of Incidentally Presented Words," *Psychological Bulletin*, 142(5), 472.

- Weman Josefsson, Karin, Urban Johnson, and Magnus Lindwall (2017), "Moderating Effects of Gender and Age within the Mechanisms of the Self-determination Theory Process Model: Examining Exercise Motivation in a Digital Context," *In Journal of Sport & Exercise Psychology*, 39(1), 330.
- Wilson, Philip M., Wendy M. Rodgers, Chris M. Blanchard, and Joanne Gessell (2003), "The Relationship Between Psychological Needs, Self-Determined Motivation, Exercise Attitudes, and Physical Fitness," *Journal of Applied Social Psychology*, 33(11), 2373-2392.
- Wilcox, Keith, Beth Vallen, Lauren Block, and Gavan J. Fitzsimons (2009), "Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision," *Journal of Consumer Research*, 36(3), 380-393.
- Woods, Andrew T., Donna M. Lloyd, Johanna Kuenzel, Ellen Poliakoff, Garnt B. Dijksterhuis, and Anna Thomas (2011), "Expected Taste Intensity Affects Response to Sweet Drinks in Primary Taste Cortex," *Neuroreport*, 22(8), 365-369.
- Wryobeck, John, and Yiwei Chen (2003), "Using Priming Techniques to Facilitate Health Behaviours," *Clinical Psychologist*, 7(2), 105-108.
- Yaemsiri, Slining, Meghan M. Slining, and Sunil K. Agarwal (2011), "Perceived Weight Status, Overweight Diagnosis, and Weight Control Among US Adults: the NHANES 2003–2008 Study," *International Journal of Obesity*, 35(8), 1063-1070.
- Zhang, Ying, and Szu-Chi Huang (2010), "How Endowed Versus Earned Progress Affects Consumer Goal Commitment and Motivation," *Journal of Consumer Research*, 37(4), 641-654.

APPENDIX

APPENDIX A: SCENARIOS USED IN STUDY 1

Emily is a university student. She is currently trying to lose weight by eating healthy meals and getting regular exercise. For example, last night Emily had a spinach salad topped with chicken and walnuts for dinner, a small piece of cake for dessert. She then went on her usual 3-mile run. Tonight, Emily had lots of homework to do and so she is a bit busier than normal. She has just finished dinner and dessert, and is trying to decide whether or not to skip her usual run in order to save time. For dinner, she had roasted vegetables over brown rice. For dessert, she was deciding between...

(Scenario 1: Choosing fitness food condition)

...a small bag of fitness trail mix and regular trail mix, and she chose to eat the fitness trail mix.

(Scenario 2: Choosing regular food condition)

...a small bag of fitness trail mix and regular trail mix, and she chose to eat the regular trail mix.

Appendix B: Scenarios Used in Study 2

Emily is a university student. She is currently trying to lose weight by eating healthy meals and getting regular exercise. For example, last night Emily had a spinach salad topped with chicken and walnuts for dinner, a small piece of cake for dessert. She then went on her usual 3-mile run. Tonight, Emily is busier than normal. She has just finished dinner and dessert, and is trying to decide whether or not to skip her usual run in order to save time. For dinner, she had two options. The first option was a bag of regular trail mix, and the second option was a bag of fitness trail mix. The fitness trail mix tastes a lot worse than the regular trail mix.

(Scenario 1: Choosing fitness food condition)

...And she chose to eat the fitness trail mix.

(Scenario 2: Choosing regular food condition)

...And she chose to eat the regular trail mix.

Appendix C: Scenarios Used in Study 3

Emma is a university student. She is currently trying to control her weight by eating healthily and running 3 miles every day. Today Emma got very hungry after class. She stopped in front of a vending machine and tried to decide what to get. The vending machine offered regular energy bars and fitness energy bars.

The regular energy bar tastes much better than the fitness energy bar, it is Emma's favorite snack, and she found it difficult to control her cravings for the regular energy bar, especially when she is very hungry. Whereas the fitness energy bar doesn't taste very good, so she doesn't like it very much.

(Scenario 1: Choosing fitness food condition)

... Emma hesitated for a while, and decided to get a fitness energy bar despite her cravings for the regular energy bar. After she ate the fitness energy bar, Emma went back to her dorm. It was late in the afternoon, so she started to consider whether or not to skip her usual 3-mile run today.

(Scenario 2: Choosing regular food condition)

... Emma hesitated for a while, and decided to get a regular energy bar to satisfy her cravings for the regular energy bar. After she ate the regular energy bar, Emma went back to her dorm. It was late in the afternoon, so she started to consider whether or not to skip her usual 3-mile run today.

Appendix D: Scenarios Used in Study 4

Emma is a university student. She is currently trying to control her weight by eating healthily and running 3 miles every day. Today Emma got very hungry after class. She stopped in front of a vending machine and tried to decide what to get. The vending machine offered regular energy bars and fitness energy bars.

The regular energy bar tastes much better than the fitness energy bar, it is Emma's favorite snack, and she found it difficult to control her cravings for the regular energy bar, especially when she is very hungry. Whereas the fitness energy bar doesn't taste very good, so she doesn't like it very much.

(Scenario 1: Choosing fitness food condition)

... Emma hesitated for a while, and decided to get a fitness energy bar despite her cravings for the regular energy bar.

After she ate the fitness energy bar, Emma went to have dinner with her friends. She wanted to order a seasonal fruit salad for dessert. When the waiter came to take her order, the waiter recommended the home-made specialty: ice cream with Chantilly made of fresh milk. The ice cream looked more tempting than the fruit salad on the menu. What do you think Emma should order? A fruit salad or an ice cream?

(Scenario 2: Choosing regular food condition)

... Emma hesitated for a while, and decided to get a regular energy bar to satisfy her cravings for the regular energy bar.

After she ate the regular energy bar, Emma went to have dinner with her friends. She wanted to order a seasonal fruit salad for dessert. When the waiter came to take her order, the waiter recommended the home-made specialty: ice cream with Chantilly made of fresh milk. The ice cream looked more tempting than the fruit salad on the menu. What do you think Emma should order? A fruit salad or an ice cream?

BIOGRAPHICAL SKETCH

Mei Han earned a doctoral degree in Business Administration with a concentration in Marketing from the University of Texas Rio Grande Valley in December 2020. She earned a master's degree in Business Administration from Worcester Polytechnic Institute in May 2014, and a bachelor's degree in Accounting from Wuhan Textile University in June 2009. Her research interests are in consumer behavior, goals and self-regulation mechanism, business ethics, augmented reality and branding.

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