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Eat now, exercise later: The relation between consideration of immediate and future consequences and healthy behavior

Jannette van Beek *, Gerrit Antonides, Michel J.J. Handgraaf

Economics of Consumers and Households Group, Wageningen University, The Netherlands

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ABSTRACT

In light of the current obesity epidemic, individual choices for food and exercise should be understood better. Consideration of the immediate and future consequences of these choices (i.e., time orientation) can be an important predictor of eating and exercising behavior. The objective was to show that behavior-specific time orientation differentially predicts eating and exercising behavior. Two studies were conducted among students ($N = 55$) and the general public ($N = 165$). Participants completed two adapted versions (for food and exercise) of the Consideration of Future Consequences Scale (CFC), each consisting of the subscales CFC-future and CFC-immediate. Thereafter they reported their eating and exercising behavior. Study 1 showed that CFC-food, but not CFC-exercise, predicted eating behavior. Similarly, both studies showed that CFC-exercise, but not CFC-food, predicted exercising behavior. Moreover, eating behavior was predicted by CFC-food/immediate, whereas exercising behavior was predicted by CFC-exercise/future. In conclusion, behavior-specific time orientation predicts behavior within a behavioral domain but less well across behavioral domains. Additionally, consideration of immediate and future consequences differentially predict behavior across behavioral domains. In order to predict behavior, time orientation is measured best at a behavior-specific level.

1. Introduction

Choices for food and exercise are made on a daily basis. Whereas some individuals consider the future consequences of these choices, others are more concerned with the immediate consequences. Is it true, however, that they do so regardless of the type of behavior? Or could it also be that for one behavior they consider the immediate consequences more, whereas for another behavior they consider the future consequences more? Insight into such differences is essential in order to predict and stimulate healthy eating and exercising behavior.

In Western societies, many people experience difficulties with eating healthily, being physically active and maintaining a healthy weight, which is reflected in the ever-increasing prevalence of overweight (Cutler, Glaeser, & Shapiro, 2003). Both eating and exercising behavior are determined by choices involving trade-offs between immediate outcomes (e.g., pleasure) and future outcomes (e.g., adverse health effects). Consideration of these trade-offs differs between individuals (Strathman, Gleicher, Boninger, & Edwards, 1994) and is referred to as "time orientation." Consequently, time orientation provides a promising explanation of how people make choices for food and exercise.

Recent evidence indicates that a single individual's time orientation may differ across behaviors (e.g., financial vs. health behavior; Hardisty & Weber, 2009). In a similar vein, we investigate relations between time orientation and behavior in the behavioral domains of food and exercise. Furthermore, research indicates that immediate and future consequences differentially predict different types of financial behavior (Antonides & Nyhus, in preparation). Similarly, we investigate whether eating and exercising behavior are differentially predicted by consideration of immediate and future consequences.

1.1. Time orientation

Time orientation is extensively addressed in different literatures, ranging from time preference and temporal discounting (Frederick, Loewenstein, & O'Donoghue, 2002) in economics to time perspective (Zimbardo & Boyd, 1999) and consideration of future consequences (Joireman, Strathman, & Balliet, 2006) in psychology. We use "time orientation" as an overarching concept for these constructs and define this as a general orientation towards the present or the future. The concept includes, but is not limited to, the extent to which one considers the immediate and future consequences of one's current behavior. Generally, people tend to

* Corresponding author. Address: Economics of Consumers and Households Group, Wageningen University, P.O. Box 8130, Bode 55, 6700 EW Wageningen, The Netherlands. Tel.: +31 (0)317 484872; fax: +31 (0)317 485373.

E-mail addresses: jannette.vanbeek@wur.nl (J. van Beek), gerrit.antonides@wur.nl (G. Antonides), michel.handgraaf@wur.nl (M.J.J. Handgraaf).

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care more about the present and less about the future (Frederick et al., 2002), but individual differences exist. Whereas present-oriented individuals tend to focus on the immediate consequences of their behavior, future-oriented individuals are more concerned with the future consequences of their behavior (Strathman et al., 1994).

1.2. Time orientation across domains

Time orientation not only varies between but also within individuals. Differences across domains such as health, money, and the environment have been found (Hardisty & Weber, 2009). However, studies on domain-differences often reveal mixed and inconsistent results (Weatherly, Terrell, & Derenne, 2010). For example, whereas most studies found higher discount rates for health than for money, some studies found the opposite or no difference at all (Chapman, 2003).

One explanation for these mixed findings might be that domains are not well-defined (Foxall, Doyle, Yani-de-Soriano, & Wells, 2011). For example, measuring discount rates for health is based on the assumption "that delay discounting of health-related outcomes is itself unitary across different health issues" (Weatherly et al., 2010, p. 274). However, even though domains have a common denominator (e.g., health), they are actually multi-faceted categories consisting of fairly different behaviors (e.g., eating, smoking). We investigate, therefore, whether time orientation differs across two behavioral domains (food and exercise) within the broader domain of health, using behavior-specific adaptations of the Consideration of Future Consequences Scale (CFC; Strathman et al., 1994).

1.3. Consideration of immediate and future consequences

The CFC (Strathman et al., 1994) is frequently used to measure individual differences in time orientation. Although there is not yet consensus about the scale's structure (Petrocelli, 2003; Rappange, Brouwer, & van Exel, 2009; Ryack, 2012), two subscales can be distinguished: CFC-future and CFC-immediate (Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008). CFC-future captures concern with future consequences (e.g., achieving future outcomes), whereas CFC-immediate captures concern with immediate consequences (e.g., satisfying immediate concerns). It should be noted, however, that CFC-future and CFC-immediate are not necessarily negatively correlated.

CFC-future and CFC-immediate are empirically distinguishable. For example, CFC-immediate predicts trait self-control (Joireman et al., 2008) and BMI (Adams, 2012), whereas CFC-future does not. Moreover, CFC-immediate predicts short-term financial behavior (e.g., making ends meet), whereas CFC-future predicts long-term financial behavior (e.g., saving; Antonides & Nyhus, in preparation). Following these studies, we investigate whether eating and exercising behavior are differentially predicted by CFC-future and CFC-immediate. By doing so, we respond to a call for research into the unique contributions of CFC-future and CFC-immediate (Joireman et al., 2008).

1.4. Study overview

The first objective (Studies 1 and 2) was to investigate whether behavior-specific time orientation (i.e., CFC-food and CFC-exercise) predicts behavior within and across the behavioral domains of food and exercise. We hypothesize that CFC-food predicts eating behavior, but exercising behavior less well (H1a) and that CFC-exercise predicts exercising behavior, but eating behavior less well (H1b). The second objective (Studies 1 and 2) was to investigate whether consideration of immediate and future consequences differentially predict eating and exercising behavior. The third objective (Study 2) was to show the existence of behavior-specific time orientation and its dimensions. We hypothesize that CFC-food and CFC-exercise are different, yet related, constructs (H3a); each consisting of CFC-future and CFC-immediate (H3b). To test our hypotheses, we created adapted scales, but the scale adaptation part, although we consider it useful and important, is not the main focus of our paper.

2. Study 1

2.1. Method

2.1.1. Participants

Fifty-five Wageningen University students (21 male, 34 female) with a mean age of 21.29 (*SD* = 2.25) years participated.

2.1.2. Procedure

Students of four undergraduate courses in Social Sciences were asked to complete a paper and pencil questionnaire consisting of two parts. The first part consisted of CFC-food and CFC-exercise in counterbalanced order. The second part consisted of self-reported eating and exercising behavior, and demographics. All questions (in both studies) were answered on 7-point Likert scales (ranging from 1 = *disagree* to 7 = *agree*). The questionnaire was administered in English and could be completed in 15 min. Participants did not receive any compensation.

2.1.3. Measures

2.1.3.1. CFC-food and CFC-exercise. The CFC (Strathman et al., 1994) contains 12 items and has two subscales, CFC-future (5 items) and CFC-immediate (7 items; Joireman et al., 2008). Higher scores on CFC-future indicate more consideration of future consequences, whereas higher scores on CFC-immediate indicate more consideration of immediate consequences. For calculation of full scale scores, CFC-immediate items were reverse-coded. Therefore, higher scores on the full scale indicate more consideration of future consequences. CFC-food and CFC-exercise were created by incorporating the words *food* or *eating behavior*, respectively *physical activity* or *physical activity pattern* in all items. All items of CFC-food and CFC-exercise are provided in Appendix A.

2.1.3.2. Self-reported eating and exercising behavior. Self-reported eating and exercising behavior were measured with the statements "In general, I eat healthy" and "In general, my physical activity is sufficient."

Table 1
Descriptive statistics for CFC-food, CFC-exercise, and CFC-general (Studies 1 and 2).

	Study 1			Study 2		
	M	*SD*	α	*M*	*SD*	α
CFC-food	4.54	0.76	.83	4.72	0.88	.81
CFC-food/future	4.68	0.86	.66	4.86	0.93	.66
CFC-food/immediate	3.56	0.88	.81	3.38	1.11	.82
CFC-exercise	4.47	0.77	.84	4.54	0.86	.79
CFC-exercise/future	4.65	0.88	.70	4.69	0.92	.62
CFC-exercise/immediate	3.66	0.94	.87	3.57	1.11	.82
CFC-general[a]				4.65	1.20	.76
CFC-general/future[b]				4.56	1.38	.67
CFC-general/immediate[b]				3.27	1.38	.71

Note: *N* = 55 (Study 1) and 165 (Study 2).
[a] Four items.
[b] Two items.