



## Research report

# Healthy and unhealthy social norms and food selection. Findings from a field-experiment



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## ABSTRACT

The behavior of others in people's social environment (i.e., descriptive norms), as well as their opinions regarding appropriate actions (i.e., injunctive norms) strongly influence people's decisions and actions. The goal of this study was to extend prior laboratory research on the influence of social norms on food choices, by conducting a field-experiment in an on-campus food court. One of three different messages was posted on a given day: a healthy descriptive norm, healthy injunctive norm, or an unhealthy descriptive norm. Effects of these social norms messages on food choice were compared against each other and a no-message control condition. In total, 687 students reported their food choice through a questionnaire provided to them. Food choices were analyzed for participants who reported being exposed to one of the social norms signs and those in the control condition ( $N = 220$ ). Findings showed that the healthy descriptive norm resulted in more healthy food choices, compared to an unhealthy descriptive norm, as well as the control condition. The difference between the injunctive healthy norm and the control condition was not significant, though those in the injunctive norm condition did make more healthy decisions, than those in the unhealthy descriptive norm condition. Implications with regard to theory and practice are discussed.

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## Introduction

Globally, more than 1.4 billion adults are overweight, and more than one third of them are obese, with a body mass index higher than 30 (World Health Organization [WHO], 2012). The chance of incurring health risks such as diabetes and cardiovascular diseases grows with increasing overweight (WHO, 2012). As a result of the increase in overweight and obesity incidence rates, more and more social circles include people who are overweight, as obesity spreads through social networks (Christakis & Fowler, 2007). These changes in the social environment may make it more difficult for people to maintain a healthy diet, because if others in their social circle are consuming unhealthy, yet tasty foods, they have less incentive to act differently. Unhealthy social norms provide people with no reason to change and may even encourage those who have a healthy diet to eat less healthy in an attempt to conform to the majority (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). On the other hand, the social environment may also play a positive role in the initiation and maintenance of healthy diets through the provision of social support (Uchino, Cacioppo, & Kie-

colt-Glaser, 1996) or by setting the right example for others (Burger et al., 2010).

Ultimately, to reduce problems with overweight and obesity, behavior changes need to be made. Some key behaviors in this regard include increasing fruit and vegetable intake and reducing the consumption of fatty foods (WHO, 2012). Reducing caloric intake by 100 calories a day by, for example, replacing a hamburger with a salad, can significantly offset weight gain (Hill, Wyatt, Reed, & Peters, 2003). Investigating positive and negative influences regarding food choice stemming from the social environment is imperative, as it can provide a key to accelerate behavior changes in the midst of an increasing trend in overweight and obesity.

### Descriptive norms

The behavior of others in our social environment (i.e., descriptive norms) strongly influences our own decisions and actions (e.g., Burger & Shelton, 2011; Cialdini, Reno, & Kallgren, 1990; Keizer, Linderberg, & Steg, 2008; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). Descriptive norms are thought to influence behavior because they provide information about the correct way to act in a certain situation and thereby serve people's goal of accuracy: "if a lot of people are doing it, it must be right" (Cialdini, 1984; Cialdini & Goldstein, 2004; Jacobson, Mortensen, & Cialdini,

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2011). It is because descriptive norms provide social proof that they often function as shortcuts (i.e., heuristic cues) in the decision-making process and thereby influence our behavior especially at low levels of effortful cognitive activity (Cialdini, 1984; Jacobson et al., 2011).

Healthy and unhealthy descriptive norm perceptions have been found to be positively associated with healthy and unhealthy food intake, respectively (Lally, Bartle, & Wardle, 2011). Similarly, they also affect intentions to consume healthy foods (Smith-McLallen & Fishbein, 2008) and adopt a healthy diet (Yun & Silk, 2011). Additionally, experimental evidence indicates that descriptive norms influence actual food choices people make (Burger et al., 2010). Burger et al. (2010; study 1) found that participants who were made to believe that others before them had made healthy food choices also tended to make more healthy choices themselves (67.5%), compared to when participants were made to believe that others before them had made unhealthy food choices, in which case less than half of the participants made a healthy choice (40.0%). In a control group that received no normative information, a little over half of the participants chose to have a healthy snack (55.0%). These findings were replicated in a second experiment.

The goal of the current study was to extend prior findings from cross-sectional and laboratory studies by investigating the effects of healthy and unhealthy descriptive norm messages on food choice within a naturalistic setting. Studying the effects of social norms in a field-setting is crucial for theory development as well as practice, as it increases external validity of findings, even though, compared to controlled laboratory-based studies, internal validity may be somewhat compromised (Cook & Campbell, 1979). This naturalistic approach aligns with and extends prior research on both social norms (e.g., Cialdini et al., 2006; Goldstein, Cialdini, & Griskevicius, 2008; Schultz et al., 2007) and food choice (e.g., Lowe et al., 2010; Wansink & Kim, 2005).

### *Injunctive norms*

In social psychology a distinction is made between descriptive and injunctive norms. While descriptive norms refer to the behavior of most others in our social environment, injunctive norms describe the conduct that most others approve or disapprove of (Cialdini et al. (1990). Injunctive and descriptive norms may align, but they may also be in conflict and interact to guide behavior (e.g., Schultz et al., 2007; Smith & Louis, 2008). In contrast to descriptive norms, injunctive norms are most influential under conditions of high effortful cognitive activity. This relates to the goal that underlies the effectiveness of injunctive norms. Injunctive norms are thought to be effective because they serve people's goal of affiliation. Through strategic action, such as conforming to injunctive norms, people aim to obtain social approval and avoid disapproval and other negative social sanctions (Cialdini & Goldstein, 2004; Cialdini et al., 1990; Deutsch & Gerard, 1955). However, that what is socially desirable may not always be personally desirable, as a result of which a conflict may arise between intrapersonal and interpersonal goals. This conflict requires effortful cognitive activity to resolve; therefore, injunctive norms have been found to be more influential when self-regulatory resources are high (Jacobson et al., 2011).

While injunctive and descriptive norms differ in the processes that underlie their effectiveness, both perceptions regarding food consumption and dieting behaviors of most others (i.e., descriptive norms), as well as perceptions regarding others' approval related to food consumption and dieting (i.e., injunctive norms) have been found to predict intentions to consume healthy foods and pursue a healthy diet (Smith-McLallen & Fishbein, 2008; Yun & Silk, 2011). In addition to investigating the effects of descriptive norms in a naturalistic environment it is therefore of interest to examine

the external validity of findings pertaining to the influence of injunctive norms on food choice.

### *Current study*

In the current study, the effects of normative messages (i.e., healthy descriptive, unhealthy descriptive, and healthy injunctive norms) on food choice were tested in a naturalistic environment. In line with previous studies that have investigated the negative effects of messages describing the high prevalence of undesirable behaviors (Burger et al., 2010; Cialdini et al., 2006), or low prevalence of desirable behaviors (Lapinski, Rimal, DeVries, & Lee, 2007; Sieverding, Decker, & Zimmermann, 2010), our expectation was that an unhealthy descriptive norm message, communicating the high prevalence of unhealthy food choices, would result in more unhealthy food choices, compared to both a no-message control condition and healthy social norm messages (both descriptive and injunctive). We also predicted that both healthy norm messages (i.e., descriptive and injunctive) would result in more healthy food choices, compared to both the control condition and the unhealthy descriptive norm message.

## **Method**

### *Field setting*

The setting for this study was an on-campus food court, open on weekdays during lunch hours (11 AM–2 PM). In order to study the effects of healthy descriptive norms, unhealthy descriptive norms and healthy injunctive norms within a single setting, the healthy and unhealthy descriptive norm message described the high prevalence of either a healthy or an unhealthy food choice, respectively. The injunctive norm message communicated approval related to healthy food choices. In the food court, a variety of food options that varied in healthfulness were offered. Choices included salads (served in the tossed salad area) and hamburgers (grill area). These two establishments were placed across from each other in the food court and offered lunch at about the same price. This made salads (as a healthy food option) and hamburgers (as an unhealthy food option) ideal for studying the effects of healthy and unhealthy descriptive norms on students' food choice. Taking this approach allowed the study to be administered in one location, keeping all other circumstances as constant as possible, thereby reducing the impact of confounding variables.

### *Participants*

A total of 729 people who visited the food court at the campus of an eastern private university in the United States agreed to participate in this field study. To promote homogeneity in the sample and because the descriptive normative messages pertained to behaviors of students, only regular students at the university were included. Forty-two participants were excluded from the study because they were not students, but were, instead, staff members or visiting students. In the final sample of 687 students (336 men, 347 women, 4 no answer), 78.2% were born and raised in North America, 11.5% in Asia, 4.2% in Europe, 1.7% in Latin America, 1.5% in the Middle East, 0.7% in Africa, and 0.4% in Australia; 1.6% marked the *other* category. The age of participants ranged from 17 to 34 years old ( $M = 20.85$ ,  $SD = 2.52$ ). The procedure and materials were approved by the university's institutional review board. Upon completion of the field-experiment, the responsible researcher set up a stall in the food court for debriefing. People who came to the stall were debriefed and offered a choice of fruit or candy to thank them for their participation.

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