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# The Impact of Linguistic Styles on Message Delivery in Encouraging the Use of Leftover Bags for Food Waste Reduction

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**KEYWORDS:** *food waste, linguistic style, restaurant, consumer behavior*

**Executive Summary:** Plate leftovers are a major cause of food waste in restaurants. To reduce food waste, many restaurants encourage customers to use “doggy bags” to take away their plate leftovers. However, the efficiency of adopting such leftover bags is still questionable as some customers may feel embarrassed to use leftover bags. Hence, the current research aims to explore how to leverage different linguistic styles (figurative vs. literal language) to encourage the usage of leftover bags for food waste reduction purposes. Furthermore, this research will investigate the linguistic style efficiency in various restaurant dining contexts across two empirical studies. Study 1 will examine customers’ responses to different linguistic style messages when they make orders either with or without the restaurant server around (server taking the order vs. customer ordering by using the table tablet). Study 2 will examine whether there are any differences in terms of linguistic impacts on food waste reduction when customers are with or without other customers around (solo diners vs. group diners).

## Introduction

To reduce the prevalent food waste in restaurants, the industry promotes leftover containers or bags, also known as doggy bags, and encourages consumers to use them to take uneaten food back home and consume later (Dhir et al., 2020; van Herpen et al, 2021). Even though taking leftovers does not necessarily promise that customers actually consume them, it can be regarded as a willingness to make less food waste (Hamerman et al., 2018). Thus, the

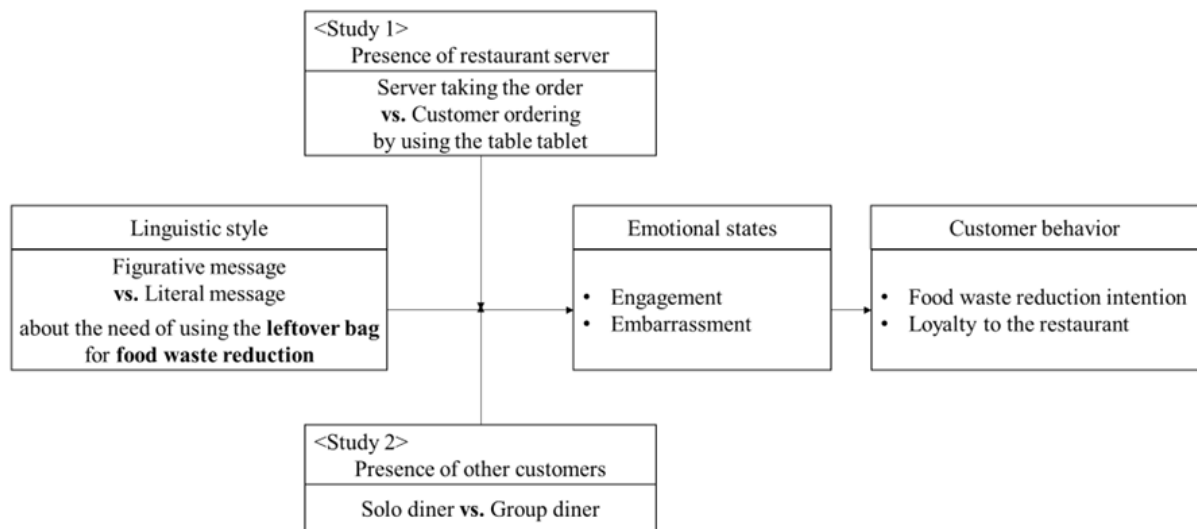
intention to reduce can be used since we cannot measure the actual behaviors. The setting is that a leftover bag is provided as a default option, so the restaurant server puts it on the table before the customers are seated. In that way, customers can take leftovers as they desire. Drawing on persuasion theory and applying marketing communication research to the current food-waste reduction context, this study aims to investigate the efficiency of leveraging different linguistic styles in marketing messages to encourage the use

of leftover bags. The research will examine which styles of marketing messages (figurative vs. literal language) can better enhance customers' food waste reduction intention by using leftover bags and can further improve customer loyalty to the restaurant (Kasim & Ismail, 2012). In addition, the research will test the efficiency of various linguistic styles across two different dining and ordering situations: with or without a restaurant server around (Study 1), and with or without other customers around (Study 2).

Furthermore, the underlying mechanism leading to varying levels of behavioral intentions (customers' food waste reduction and loyalty to the restaurant) will be explored. Persuasion research suggests that emotional states, such as engagement or embarrassment, would mediate the effect of linguistic style on customer behaviors (Choi et al, 2019). When consumers are persuaded by a certain message, they are likely to engage in activities promoted by the message (Zhang et al., 2020), such as using leftover bags. However, this may not be the case in other cultural contexts. For instance, whereas utilizing leftover bags is common practice in the U.S., it is not in France and other countries with high-power distance individuals. In France, using leftover bags is not a social norm and is frowned upon which makes people ashamed to ask it (Chazan, 2016; Hester, 2016). In a high-power distance society as

well, people would not ask for leftover bags if they want to impress their companions as it is considered as breaking the social norm and causes embarrassment (Hamerman et al., 2018; Vizzoto et al., 2021). Consumers are likely to feel embarrassed in such cultural contexts. Hence, engagement and embarrassment will be examined as parallel mediators to unfold the reasoning line leading to varying levels of behavioral intentions. Altogether, the current study proposes the research model (Figure 1) to explore answers to the following research questions:

1. Do various linguistic styles (figurative vs. literal) in marketing messages promoting the usage of leftover bags for food waste reduction significantly affect customers' behavioral intentions (i.e., food waste reduction intention and loyalty to the restaurant) because of their emotional states (i.e., engagement or embarrassment) affected by different linguistic styles?
2. Does the presence of other people (i.e., restaurant servers or other customers) significantly affect customers' behavioral intentions (i.e., food waste reduction intention and loyalty to the restaurant) because of their emotional states (i.e., engagement or embarrassment) affected by different linguistic styles?

**Figure 1.** Research model

## Literature Review

### *Food waste in the restaurant industry*

The challenge of restaurant food waste has been recognized since the 1980s, but still, 30-40 percent of the food supply is estimated to be wasted every year in the United States (FDA, 2023) and, especially, the hospitality and food service sector contributes to the second to the third largest portion of food waste in Europe (Wakefield et al, 2020). Food waste is categorized into three types: avoidable, possibly avoidable, and unavoidable food waste, following the level of human involvement in its generation (WRAP, 2013). Focusing on avoidable and possibly avoidable food waste, the industry has taken many different attempts to reduce food waste in restaurants (Bohdanowicz, 2006). As one way of effort in reducing food waste, many customer-focused solutions have been implemented, such as offering different portion sizes (Freedman, et

al., 2010), reducing plate sizes (Wansink, et al., 2013), and using leftover bags (van Herpen et al, 2021). Despite the increasing scholarly attention on this topic, related research is still lagging. To bridge such a research gap, the current study aims to investigate how to leverage different linguistic styles in marketing communications to encourage customers' food waste reduction behaviors, such as using leftover bags.

### *Linguistic style in message delivery*

The comparative advantages of figurative versus literal language have been discussed in the previous marketing communication literature (Wu et al., 2017; Ye et al., 2022). Figurative language refers to the usage of diverse linguistic techniques such as simile, metaphor, word play, or hyperbole in addition to the connotation of their literal meanings; on the other hand, literal language indicates the use of words based on their defined meanings (Fogelin, 1988).

Previous research shows mixed findings about the comparative efficiencies between figurative and literal linguistic styles across various study contexts. On one hand, figurative language shows more positive effects than literal language. For instance, research finds that traditional advertisements (e.g., print ads, TV commercials) using figurative language leads to better customer attitudinal responses and purchase intention (Chang et al., 2013). As online peer reviews become increasingly popular among customers, research indicates that online reviews in figurative language also show positive impacts on customers in hedonic consumption contexts (Kronrod et al., 2013). On the other hand, compared with fact-based literal language, figurative-style reviews do not provide significant advantages in terms of persuasive power, especially when the reviewer is not an expert (Wu et al., 2017). Furthermore, figurative (vs. literal) language may diminish customers' perceived credibility toward service providers during service encounter context, resulting in less favorable customer responses to service employees (Choi et al., 2019).

Extending this line of research, the current study aims to explore which type of linguistic style used in restaurants' marketing communication may be more efficient to promote food waste reduction through using leftover bags across different dining contexts.

## Methods

To test the proposed conceptual model and explore answers to the research questions,

a series of two between-subjects experimental design studies will be conducted. Study 1 is 2 (linguistic style: figurative vs. literal language) by 2 (the presence of restaurant server: server taking the order vs. customer ordering by using the table tablet), and Study 2 is 2 (linguistic style: figurative vs. literal language) by 2 (the presence of other customers: solo diner vs. group diners). In each study, participants recruited from professional online survey platforms will be randomly assigned to one of the four scenarios. Both studies consist of hypothetical scenarios and related questions adopted from previous literature to test constructs in the proposed model.

## Expected Findings

It is expected that figurative (vs. literal) language leads to higher engagement whereas literal (vs. figurative) language leads to lower embarrassment; together the parallel mediators lead to varying levels of behavioral intention and loyalty. Further, the presence of others (servers and other customers) will impact the focal customers' food waste reduction behaviors.

Theoretically, this research will extend the understanding of the functionality and efficiency of linguistic styles in the persuasion of pro-environment/pro-social behaviors (food waste reduction).

Managerially, the research can provide practical solutions and guidelines for restaurants to encourage the usage of leftover bags for food waste reduction purposes of leftover bags for food waste reduction purposes.

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