THE EFFECT OF MATERIALLY REFERENCED TIP RECOMMENDATIONS ON TIPPING BEHAVIOR

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The Effect of Materially Referenced Tip Recommendations on Tipping Behavior

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CERTIFICATE OF ORIGINALITY

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ABSTRACT

Since tips function as an important source of income for a vast number of service employees and serve as an effective financial incentive for numerous businesses in the service sector, nudging customers to tip has become increasingly ubiquitous in the business world. Thanks to the rapid evolution and widespread adoption of mobile Internet and digital payment collection systems, the practice of exposing customers to tip recommendations, as one way to increase tips, has gradually gained traction among companies in the service industry. However, past research has overly concentrated on number-only tip recommendations and how to increase the effectiveness of such tip recommendations through manipulating the numerical attributes of the suggested tip amount. More importantly, the prior literature has failed to draw a definitive conclusion regarding the most effective design of such number-only tip recommendations. This thesis thus fills an important void regarding how to design effective tip recommendations by examining the effectiveness of a newly emerging yet not widely adopted design of tip recommendations—materially referenced tip recommendations (i.e., depicting a product that financially equals the suggested tip amount).

In this thesis, Chapter 1 first provides a brief and concise summary of the entire research. Chapter 2 begins with a comprehensive review of existing literature on tipping behavior, the motives behind tipping, the design of tip recommendations, outcome simulation, and meaningfulness, followed by the establishment of the theoretical framework and the development of hypotheses regarding the research question. Moving to Chapter 3, I present the results of nine experiments, which

demonstrate that an easily implemented design of tip recommendations—adding materially referenced items to tip recommendations—prompts tipping. This effect persists whether the material references are presented pictorially or verbally, and is sequentially mediated by the more vivid outcome simulation and higher perceived meaningfulness of the tipping behavior. More importantly, the effect is mitigated when customers undergo high cognitive load, when consumers suspect companies of engaging in tip theft, or when the referenced product is irrelevant to the focal service context. Furthermore, I empirically rule out various alternative explanations for the observed effect, including more negative self-attribution, shortened psychological distance between the customer and the server, higher perceived communality of the customer–server relationship, higher perceived novelty of tipping experiences, the discrepancy between the perceived financial value of referenced goods and the suggested tip amount, higher level of customer engagement, customers' stronger affective reactions, and lower level of pain of payment. Finally, Chapter 4 delves into the important theoretical contributions and the managerial implications of the research, in addition to summarizing findings and discussing future research avenues.

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CHAPTER 1. INTRODUCTION

From dining in restaurants to getting a haircut, from taking a cab to asking for room cleaning services, tipping is so ubiquitous that in the US food and dining industry alone, the total tip amount was estimated to be US$68.4 billion in 2017 (Tang et al. 2022). Furthermore, leveraging advancements in modern information technology, a growing number of companies in industries where tipping was once uncommon now have the opportunity to incorporate tip solicitation features in their service process (Xie 2014). For example, many gig economy companies (e.g., Uber, Fiverr) have been incorporating tipping features into their platforms for years (Hawkins 2019). In a similar vein, thanks to the development of digital transaction tools and systems (e.g., Square, PayPal), numerous offline businesses, where tipping was not customary (e.g., fast-food chains), are now encouraging consumers to offer voluntary gratuities by showing them tip recommendations (Xie 2014; Polastre 2016; Morales 2022).

Given the magnitude of tipping, it has emerged as a significant subject of study in marketing, and marketing researchers have explored its effects at various levels. From a micro-level perspective, tips constitute a substantial portion of income for many service employees across various industries, particularly for those who often face financial vulnerability and hardship (Andrea et al. 2020; Elliott and Bowman 2020). Therefore, adequate tips play a vital role in employees' psychological well-being, commitment to the company, and citizenship behavior, and ultimately contribute to better work motivation and job performance (Azar 2012; Lynn, Kwortnik, and Sturman 2011; Sehkaran and Sevcikova 2011; Wang, Baker, Kim, and Ma 2021). On a macro level, considering that jobs relying on tips as a major income source are often underpaid, tips become essential for enhancing the welfare of the

entire workforce (Azar 2012), “the viability of businesses” (Lee, Noble, and Biswas 2018, 318), and even the sustaining of sufficient consumer demand (Azar 2012; Lynn 2017). Therefore, marketing scholars have proposed various strategies to encourage customers to tip as well as to tip more. Some of the tactics are based on customer-server interactions, such as displaying a sincere smiley face (Bujisic et al. 2014), squatting down when serving the table (Lynn and Mynier 1993), offering small gifts (Frank 2020), touching customers when returning the change (Crusco and Wetzel 1984), and introducing names at the beginning of interactions (Shih et al. 2019). Others are more related to service procedures and branding, such as presenting credit cues (McCall and Belmont 1996), requesting tips before asking for ratings (Chen et al. 2023), and including “thank you” on checks to customers (Rind and Bordia 1995).

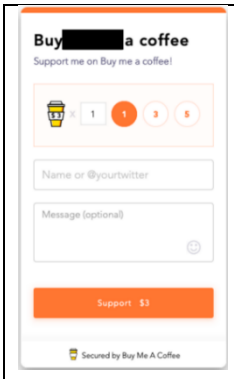
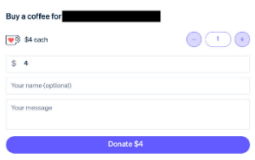
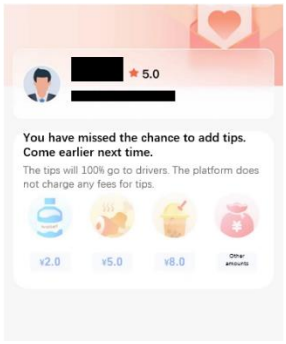
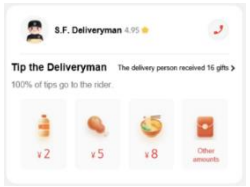
In recent years, a novel approach to tip solicitation has gained traction: providing customers with tip recommendations (i.e., suggesting a specific amount of money or a fraction of the bill for tipping; Bluvstein and Raghubir 2021). Thanks to the rapid evolution of mobile Internet and digital payment collection systems, tip recommendations are now widely adopted by numerous companies (e.g., Buffalo Wild Wings, Crumbl Cookies, Starbucks), platforms (e.g., Deliveroo, Fiverr, Uber), and payment services providers (e.g., Square, Stripe, PayPal). Despite its growing popularity, the effectiveness of this tool remains unclear and appears to be influenced by various external factors (e.g., Cabano and Attari 2023; Hu 2018; Karniouchina, Mishra, and Verma 2008). For instance, Strohmetz and Rind (2001) found no impact of tip recommendations on tipping behavior in the joint consumption context, as evidenced by data collected from restaurants. This conclusion aligns with a recent experiment conducted through MTurk by Cabano and Attari (2023). In a similar vein, a comparison of large-scale field data reveals that tip recommendations work far less

effectively in the ride-sharing context compared to the taxi-service context (Chandar et al. 2019; Tan and Zhang 2021). Meanwhile, past literature has also failed to draw a definitive conclusion on which type of tip recommendation design is most effective. For instance, while some researchers have suggested that round numbers should outperform non-round numbers in the design of tip recommendations (Lynn, Flynn, and Helion 2013), the effect of number roundness on tipping behavior was not replicated in a large-scale field experiment (Alexander, Boone, and Lynn 2021). Consequently, the academic community is calling for more comprehensive research into the effective design of tip recommendations.

In this thesis, I examine the effectiveness of an easily actionable yet not widely used design of tip recommendations—materially referenced tip recommendation, which refers to the tactic of depicting a product (either material or experiential) that is financially equal to the suggested tip amount during tip solicitation. For example, Buy Me A Coffee, a tip-solicitation tool, allows individuals to tip "a cup of coffee" to those who request tips by giving the solicitors the suggested tip amount (see Figure 1 for real-world examples of materially referenced tip recommendations). Building on prior literature on tipping (e.g., Alexander, Boone, and Lynn 2021; Bluvstein and Raghubir 2021; Chen et al. 2023) and material reference (e.g., Friedman, Savary, and Dhar 2018; Savary, Goldsmith, and Dhar 2015), in this thesis, I investigate how and why materially referenced tip recommendations increase customers' likelihood to tip and the size of the tip. Additionally, I explore various moderators that mitigate the observed effect, including cognitive load, suspicion of tip theft, and relevance of the material references to the service context.

FIGURE 1

REAL-WORLD EXAMPLES OF MATERIALLY REFERENCED TIP RECOMMENDATIONS

			
Buy Me A Coffee	Stripe	Amap Ride-Hailing (See Appendix A1 for the original page in Chinese)	SF Express (See Appendix A1 for the original page in Chinese)

The remainder of the thesis is outlined as follows: Chapter 2 provides a comprehensive review of existing literature on tipping behavior, tip recommendation design, material reference, outcome simulation, and meaningfulness, based on which I developed the theoretical framework for the thesis. Specifically, I argue that the effect should be sequentially driven by vivid simulation of the outcome of tipping and the higher perceived meaningfulness of the tipping behavior. Moreover, I predict that this effect should be mitigated under three boundary conditions, namely, when customers experience high cognitive load, suspect that companies may misappropriate solicited tips, or when the referenced product is not relevant to the service context.

Chapter 3 presents empirical evidence supporting the proposed effect of materially referenced tip recommendations on customers' tipping likelihood and tip size, and rules out several alternative explanations for the observed effect, including more negative self-attribution, shortened psychological distance between the customer and the server, higher perceived communality of the customer–server relationship, higher perceived novelty of tipping experiences, the discrepancy between the

perceived financial value of referenced goods and the suggested tip amount, higher level of customer engagement, customers' stronger affective reactions, and lower level of pain of payment. Furthermore, this chapter empirically examines the three aforementioned boundary conditions, which are theoretically and practically relevant: cognitive load, suspicion of tip theft, and perceived relevance of referenced products to the service context. By ruling out the alternative explanations and identifying the boundary conditions, I reaffirm the role of more vivid outcome simulation and higher perceived meaningfulness of tipping behavior in the underlying process.

Chapter 4 concludes the findings, summarizes the contributions, and outlines suggestions for future research. This thesis carries substantial theoretical and practical implications. First, it introduces a novel approach to enhance tipping—utilizing materially referenced tip recommendations. By doing so, this thesis moves beyond the traditional emphasis on tip recommendation design, which predominantly focuses on modifying the numerical attributes of the suggested tip amount (e.g., Alexander, Boone, and Lynn 2021; Chen et al. 2023; Haggag and Paci 2014). This enriches the existing literature on tip recommendations and tipping behavior. Meanwhile, the findings highlight that eliciting vivid outcome simulations of tipping and increasing the perceived meaningfulness of tipping lead to more customers tipping and larger tip sizes, contributing to research on tipping motives (Lynn 2015, 2021; Whaley, Douglas, and O'Neill 2014). Second, I apply the concept of material reference (e.g., Friedman et al. 2018; Savary et al. 2015) to a new exchange-based context—tipping—and demonstrate its exemplification nature. By examining the effect of material reference from an other-focused perspective (i.e., how money can be spent on the tip recipient), I also connect material references with vivid outcome simulation (e.g., Petit, Javornik, and Velasco 2022; Ülkümen and Thomas 2013; Zhao, Hoeffler, and Zauberman 2011),

which further adds to the literature on material reference. Additionally, I contribute to the research on meaningfulness (e.g., Florian, Costas, and Kärreman 2019; Yang, Hsee, and Urminsky 2019) by providing quantitative evidence that vividly imagining the consequences of specific behaviors leads to greater meaning in performing them. This thesis also introduces an easily implementable and effective tool—materially referenced tip recommendations—to boost tipping, which offers broad implications for service workers, marketers, customers, and society at large. Last but not least, I also discuss avenues for future research, including changing the presentation format and value of the suggested tip amount, exploring other potential tipping contexts, choosing appropriate referenced products, ruling out additional alternative explanations, testing other boundary conditions related to the proposed mechanism, and examining the effect of materially referenced tip recommendations on other critical consequences in the service marketing context.

CHAPTER 2. THEORETICAL FRAMEWORK

2.1. TIPPING AND TIP RECOMMENDATIONS

Defined as sending a voluntary monetary gift to those who serve the customers (Lynn and Graves 1996; Lynn, Zinkhan, and Harris 1993), tipping is so prevalent in the US that “it is very hard to avoid paying tips in America” (Shy 2015, 2041). For instance, in the US food and dining industry alone, the total tip amount was estimated to be US$68.4 billion in 2017, constituting approximately 0.3% of the annual GDP of the US (Statista 2024; Tang et al. 2022). The significance of tipping extends beyond its sheer magnitude to practical importance: a massive number of workers rely on tips

for their livelihood (Baum, Rubio, and Congreve 2023; O'Rourke, Belli, and Mathmann 2023). As a result, an increasing number of companies utilize tips as financial incentives to enhance service performance and to attract and retain capable workers (Shy 2015; Tung 2018). Taking the gig economy as an example—an industry currently involving 15% of the U.S. labor force—tips are considered a determinant factor in the service quality of workers (Bodvarsson and Gibson 1999; Bracha and Burke 2021; Laurinavičius and Baliūnaitė 2022). Meanwhile, offering the opportunity to request tips has become a popular strategy to win the "battle for talents" among various gig platforms due to the limited supply of qualified workers (e.g., Uber; Canal 2022; McGrath 2023). From the societal perspective, adequate tips can contribute to alleviating economic inequality and reducing systematic oppression against those who are underprivileged and marginalized. This is especially pertinent as the financially vulnerable and disadvantaged groups account for a substantial portion of service employees in occupations where tips are essential to sustain workers' lives (O'Rourke, Belli, and Mathmann 2023).

Given the pivotal role of tips in the service setting and in our society, marketing scholars have explored the motives behind tipping and the contextual factors that could increase tipping accordingly (e.g., Chen et al. 2023; Lee et al. 2018; Lynn 2015, 2018, 2021; Strohmetz et al. 2002). Despite tipping being considered "voluntary," its psychological underpinnings are complex, which is partially due to the exchange nature of services and the normative view of tipping in certain service contexts (Azar 2020; Lynn 2015, 2018). Consequently, marketing scholars have paid considerable attention to strategies aiming at mitigating patrons' self-serving motives, such as a sense of duty, the desire for future high-quality services, and a desire for esteem (Lynn 2015). For example, prior research has indicated that requesting cash

tips increased the likelihood of tipping by eliciting an impression-management goal, as cash was more publicly visible (Bluvstein Netter and Raghubir 2021). On the other hand, only a few empirical studies have explored how to encourage customers to tip through a purely altruistic lens. For instance, marketing scholars have found that playing songs with prosocial lyrics as the background music could boost patrons' tipping behavior by eliciting prosocial thoughts (Jacob, Guéguen, and Boulbry 2010), while offering additional services could increase the tipping likelihood and tip size by increasing customers' desire to reward such value-added services, though they had paid extra money for such services (Shih, Jai, and Blum 2016).

Recently, one particular way of requesting tips—tip recommendations—has gained traction in the service sector. Referred to as the tactic of suggesting either a specific amount of money (i.e., dollar-framing tip recommendations) or a fraction of the bill amount (i.e., percentage-framing tip recommendations; Alexander, Boone, and Lynn 2021; Bluvstein and Raghubir 2021) for customers' references when requesting tips, tip recommendations have been adopted by various companies across a wide range of industries (e.g., Amazon, DoorDash, Square, Starbucks, Twitter, Uber; Bluvstein and Raghubir 2021). For example, Starbucks incorporates dollar-framing tip recommendations (e.g., US$0.50, US$1, US$2; Xie 2014) into the payment interface on its mobile app, allowing users to tip baristas when placing orders through the app.

Because of their popularity, tip recommendations have received considerable research attention. However, marketing scholars have predominantly focused on tip recommendation designs featuring only numerical elements; more importantly, past research has suggested that the effectiveness of such designs remains unclear and is subject to various external factors (e.g., Karniouchina et al. 2008; Strohmetz and Rind

2001). For example, based on hypothetical experiments conducted through the online research panel, Cabano and Attari (2023) found that number-only tip recommendations had no influence on tip size, as such tip recommendations could threaten customers' sense of autonomy. In a similar vein, based on data collected from the field, researchers have also found that the traditional number-only tip recommendations performed significantly better for taxi services compared to Uber rides, which was likely due to the absence of established tipping norms in the emerging ride-sharing service context (Chandar et al. 2019; Duhaime and Woessner 2019; Tan and Zhang 2021).

Setting aside the conflicting results regarding the effectiveness of such number-only tip recommendations, even though one may argue that there is still empirical evidence supporting the notion that such recommendations may increase tipping under certain circumstances (e.g., Fan, Wu, and Liu 2024; Seiter, Brownlee, and Sanders 2011), researchers have not reached a definitive conclusion on the most effective design of such number-only tip recommendations (e.g., Haggag and Paci 2014; Hoover 2022). In other words, past literature has failed to reach a consensus on how to manipulate the numerical attributes of the suggested tip amount to harness optimal results. For instance, Bluvstein and Raghubir (2021) found that dollar-framing tip recommendations (e.g., US$1, US$2, US$5) usually outperformed percentage-framing tip recommendations (e.g., 5%, 10%, 15%) in tip solicitation process because such dollar-framing tip recommendations resembled dollar-framing discounts in the promotion context. Since dollar-framing discounts have been found to create a perception of greater savings compared to percentage-framing discounts, customers might falsely believe that they tipped less money when they were nudged with dollar-framing tip recommendations (Darke, Freedman, and Chaiken 1995;

Heath, Chatterjee, and France 1995). However, some other researchers, using a large-scale field experiment, did not observe the same pattern in most cases (Alexander, Boone, and Lynn 2021).

Therefore, it is theoretically critical to investigate how marketers can improve the effectiveness of tip recommendations, given the ambiguity and inconsistency in the existing findings. This is especially pertinent to understanding if there are strategies to improve the effectiveness of tip solicitation beyond simply adjusting the numerical attributes of the suggested tip amount. Adding to this stream of research in the service marketing domain and moving beyond the scope of tip recommendation designs solely based on numbers, in the current research, I investigate how and when a newly emerging tip recommendation design—materially referenced tip recommendations—can increase customers' tipping likelihood and tip size.

2.2. MATERIAL REFERENCE LEADS TO VIVID OUTCOME SIMULATION

By definition, material reference is the practice of referencing an equally priced product (either material or experiential) when thinking about a specific amount of money (Savary, Goldsmith, and Dhar 2015). Although rarely observed in the service context, especially tipping-related scenarios, material reference is widely employed by consumers and marketers in other domains (e.g., Frederick et al. 2009; Friedman, Savary, and Dhar 2018). For instance, the educational product company SmartGurlz references the cost of participation as merely "the price of a nice dinner," whereas the charity CARE references the cost of donation as "less than the cost of Sunday newspaper." Recently, some companies have begun to incorporate material references into the design of tip recommendations, though such practices have not yet

been widely adopted, especially in Western markets. For example, those who tip the service employees through Stripe can buy one or more “cups of coffee” and spontaneously send the monetary gratuity to the recipient, with the suggested tip amount customizable by the tip requester. In a similar vein, consumers who have their parcel delivered by SF Express (a leading courier service provider in China) can send items like “bottled water” (CN¥2), “fried chicken” (CN¥5), or a “bowl of noodles” (CN¥8) to the delivery person to express their gratitude or reward their excellent service.

The pioneering research on material reference has primarily focused on its function as a signal of alternative ways to spend money on oneself (e.g., Frederick et al. 2009; Friedman, Savary, and Dhar 2018). For example, prior literature has shown that when the cost of a focal product references an equally priced alternative dissimilar (vs. similar) to the focal product, consumers will be less interested in the focal product, as such out-of-category material references activate a conflicting non-focal goal (Friedman, Savary, and Dhar 2018). On the other hand, asking individuals to write down things that a specific amount of money can purchase for themselves makes them less willing to spend the money later on (e.g., updating the basic option), as such material references remind consumers of the opportunity cost of spending the money (Frederick et al. 2009). Adding to the above findings, Savary and colleagues (2015) found that when donation appeals were accompanied by equally priced hedonic goods unrelated to the charitable appeal, participants were more likely to donate compared to when such appeals were accompanied by utilitarian material references unrelated to the charitable appeal or when such appeals were not accompanied by material references, because hedonic referenced goods led participants to believe that spending the money for their personal indulgence was

immoral when they knew that others were in need. However, the role of material reference as the exemplar of how a specific amount of money can be spent on others has largely been overlooked.

Material reference, as applied to tip recommendations, represents a specific product that the solicited tip amount could potentially be used to purchase (Frederick et al. 2009; Friedman, Savary, and Dhar 2018). In other words, it serves as an exemplar showcasing how the requested tip amount can be spent on tip recipients, highlighting tangible benefits that recipients could enjoy if they received gratuities from the customer. Outcome simulation, according to prior research, is the imitative and simulative mental representation of the desirable outcomes of one's actions based on real-world inferences (i.e., "what can happen in real life if I do this"; Cian, Longoni, and Krishna 2020; Ülkümen and Thomas 2013). Materially referenced tip recommendations, by providing a real-world example of the benefits a service employee can receive through solicited tips, guide customers' attention to the likely outcome of tipping in a simulative, imaginative manner. Therefore, materially referenced tip recommendations should spontaneously help individuals develop vivid outcome-focused mental simulation regarding tipping behavior. This argument is also partially supported by the exemplification theory in the communication field, suggesting that exemplars can lead to more vivid mental imagery of the communicated content, which consequently influences individuals' perceptions, such as the rate of risk and severity of problems (Ahn, Hahm, and Johnsen 2019; Bigsby, Bigman, and Gonzalez 2019; Green 2006; Yu, Si, and Cho 2015).

2.3. FROM OUTCOME SIMULATION TO TIPPING: THE ROLE OF MEANINGFULNESS

I further posit that vividly imagining the outcome of tipping increases the perceived meaningfulness of tipping behavior and, subsequently, enhances patrons' actual likelihood of tipping and the tip size. The pursuit of meaning is recognized as "an essential feature of human nature" (Vignoles et al. 2006, 311). Individuals spontaneously search for meaningfulness in various activities, such as life events (Wang, Sun, and Kramer 2021), social interactions (Wheeler, Reis, and Nezlek 1983), political campaigns (Losier and Koestner 1999), artwork appreciation (Russell and Milne 1997), and tasks—especially ones related to their jobs (Fletcher and Schofield 2021; Hunton and Price 1997; Vuori, San, and Kira 2012). In a similar vein, past research has also found that individuals were averse to the loss of possessions with meaning (Winterich, Reczek, and Irwin 2017). The motivational role of meaningfulness, combined with the prior findings that the sense of meaning is one of the primary self-related benefits of altruistic behavior (Donnelly et al. 2017; Olivola and Shafir 2013; Yang, Hsee, and Urminsky 2019), suggests that when meaningfulness looms larger, people should be more likely to extend help to others. Given that the altruistic motive serves as one of the essential motives behind tipping (Lynn 2015; Rifkin, Du, and Berger 2021), I argue that once customers can derive a higher sense of meaningfulness from tipping, they will be more likely to tip servers and will offer higher tips.

In the current research, I predict that the heightened outcome simulation of tipping behavior will emphasize the perceived benefit and impact of tipping on the recipient (i.e., the service provider), thereby highlighting the meaningfulness of offering gratuities. The rationale can be explained as follows: as discussed earlier, vivid outcome simulation is achieved by emphasizing the potential benefits of tipping

for tip recipients. According to the literature in the organizational behavior area, highlighting the benefits of one's tasks on others can boost the perceived meaningfulness of such tasks (Anik and Norton 2020; Bastos and Barsade 2020). For instance, Bastos and Barsade (2020) found that employees whose jobs involved providing experiential products, as opposed to material products, were inclined to perceive their jobs as more meaningful; this was because providing experiential products required a higher level of involvement, subsequently enhancing the perceived impact of their jobs on customers. In addition, prior research elucidates that meaningfulness, as a motive for action, can be uplifted through an imaginative lens (Anik and Norton 2020; Kim et al. 2021). In other words, individuals can view the activities as more meaningful by merely imagining themselves engaging in such activities. For instance, Kim and colleagues (2021) found that individuals could recognize the meaningfulness of tasks embedded with group rituals without actually engaging in them. Hence, when patrons vividly imagine the possible outcome of their tipping behavior, as illustrated by material references, they should be able to recognize the meaningfulness of tipping, even though they have not yet tipped.

Consistent with this assumption, Florian and colleagues (2019), employing a qualitative research paradigm, found that the general public's increased willingness to volunteer at refugee camps was driven by the heightened perceived meaningfulness of volunteering. Such meaningfulness was largely shaped by the illusory benefits of such activities as portrayed by the media. That is to say, media campaigns contributed to enhancing the perceived meaningfulness of volunteering among the audience even before they decided to become volunteers.

Based on the aforementioned propositions, I predict that materially referenced tip recommendations will induce more vivid outcome mental simulation—essentially,

a clear mental image of how the tip can be utilized by the tip recipient. The heightened outcome simulation, in turn, is expected to make tipping more meaningful in patrons' minds, consequently encouraging customers to tip as well as tip more. Formally, I hypothesize the following:

H1: Materially referenced (vs. not materially referenced) tip recommendations will increase tipping.

H2: The proposed effect of materially referenced tip recommendations on tipping will be sequentially mediated by both the more vivid outcome simulation and the higher perceived meaningfulness of tipping behavior.

2.4. BOUNDARY CONDITIONS

My hypothesis regarding the process underlying the effect of materially referenced tip recommendations on tipping suggests several theoretically and practically relevant boundary conditions. First, if the proposed effect of materially referenced tip recommendations on the perceived meaningfulness of tipping and subsequent tipping behavior operates through an imaginative lens (i.e., vivid outcome simulation of tipping behavior), the effect should be attenuated or eliminated once the vivid outcome simulation is inhibited. Previous research on the vividness of mental imagery (the construct that covers mental simulation; Elder and Krishna 2012) has repeatedly demonstrated that, once cognitive resources necessary for developing vivid mental imagery become unavailable, such as when one is cognitively busy, individuals' ability to mentally simulate the behavior will be impaired (e.g., Jia et al.

2017; Petrova and Cialdini 2005; Sinha and Lu 2019). For example, prior research has found that, when they did not experience high cognitive load, participants reacted more positively to progression ads than to before-after ads, because progression ads could elicit process-focused mental simulation. However, the effect was dampened when the audience experienced high cognitive load, as individuals were not able to generate a vivid mental simulation of the process under such conditions (Cian, Longoni, and Krishna 2020).

Consequently, under conditions of high cognitive demand, customers may face challenges in developing vivid outcome simulation, even when exposed to materially referenced tip recommendations. This may attenuate or eliminate the downstream effect of materially referenced tip recommendations on tipping. Stated formally, I hypothesize the following:

H3: The proposed effect of materially referenced tip recommendations on tipping will attenuate or disappear when customers experience high cognitive load.

In addition, given the growing prevalence of tipping in recent times, instances of tip theft have garnered frequent media attention (Ghaffary 2019). DoorDash, for example, faces accusations of misappropriating workers' tips by using the money as a substitute for wages; some companies have also been criticized for forcing their employees to share the tips they receive with other workers and supervisors (Heinz 2022; Moyer 2020). As consumers tend to overgeneralize one company's deviant behavior to other similar companies after being exposed to scandals specific to the focal transgressor, there is a risk that they may mistakenly believe that other companies that request tips will also be likely to misuse the solicited tips after

knowing the tip theft scandal by other companies. This suspicion could lead customers to question whether the tipped money will indeed fully reach servers when they encounter tip solicitation requests from other service providers (Goldstein, Cialdini, and Griskevicius 2008; Jonsson, Greve, and Fujiwara-Greve 2009). Given that the perceived meaningfulness of one's behavior is heavily influenced by the benefits others can receive from oneself (Grant 2008; Rosso, Dekas, and Wrzesniewski 2010), when customers suspect that recipients may not retain all of the solicited tips, they may perceive tipping as less beneficial to recipients. Consequently, they might find tipping less meaningful and reduce their tipping accordingly.

Following the above argument, I expect that suspicions surrounding whether the solicited tips will be embezzled will also moderate the proposed effect of materially referenced tip recommendations. Specifically, I predict that the effect of materially referenced tip recommendations will be weakened or dismissed entirely when customers suspect that the solicited tips will not be fully retained by the recipient. Formally, I hypothesize the following:

H4: The proposed effect of materially referenced tip recommendations on tipping will attenuate or disappear when customers suspect that companies will engage in tip theft.

Furthermore, the characteristics of referenced goods shall also influence the effectiveness of materially referenced tip recommendations. In the current research, I specifically focus on the relevance of referenced products to service context. Drawing on previous literature regarding the perceived contribution of goal pursuit to goal progress and goal attainment (e.g., Koo and Fishbach 2012; Min, Martin, and Jung

2013; Pergola, Trotta, and Suchan 2013; Zambrano et al. 2022), I define the relevance of referenced products to the service context as the extent to which the referenced product can help the service provider (i.e., potential tip recipient) fulfill their job duties (i.e., delivering services to customers). For instance, a bottle of water can help delivery platform drivers to drive for longer periods and deliver more meals or packages, whereas a balloon cannot directly contribute to drivers' higher efficiency in completing delivery tasks.

Prior research has suggested that the relevance of the referenced goods to the service context could impact the perceived meaningfulness of tipping behavior. First of all, the focal goal for service providers is to provide services for their customers (Hellström and Revi 2019). Given that the behaviors that can significantly contribute to the fulfillment of the focal goal will be perceived as more meaningful and that perceived impact is positively associated with meaningfulness perception (Bastos and Barsade 2020; Touré-Tillery and Fishbach 2011; van Tilburg and Igou 2013), referenced goods that are not very helpful for servers to complete their jobs should be interpreted by patrons as less meaningful, even though such material references can still eliciting more vivid outcome simulation and benefit servers to some extent. The above assumption aligns with the previous literature regarding individuals' helping behavior. Specifically, social psychologists have argued that recipients' neediness can influence the perceived impact of the helping behavior: when recipients of help do not urgently need it, help-givers tend to view the helping behavior as less impactful, leading them to become reluctant to help (Carroll and Kachersky 2019; Zagefka et al. 2012; Zagefka and James 2015). Once again, given the close links between perceived impact and perceived meaningfulness that I have discussed earlier (e.g., Bastos and Barsade 2020), it is reasonable to argue that the referenced goods less relevant to the

focal service context will be viewed as less needed and less necessary, thereby reducing the perceived meaningfulness of tipping the server.

I hypothesized that the effect of materially referenced tip recommendations on tipping depends on the perceived meaningfulness of tipping behavior. Following the arguments outlined above, I expect the perceived relevance of the referenced product to the focal service context to moderate the proposed effect. Specifically, I predict that the effect of materially referenced tip recommendations on tipping will be weakened or dismissed when the referenced product is less relevant to the service context. Putting it formally, I hypothesize that:

H5: The proposed effect of materially referenced tip recommendations on tipping will attenuate or disappear when the referenced product is less relevant to the service context.

2.5. ALTERNATIVE EXPLANATIONS

In the current research, I also empirically examine several theoretically relevant alternative accounts. First and foremost, since the current research differs from previous literature on material reference in terms of the research scope and the consumer of the referenced goods, it is unlikely that the effect can be driven by negative self-attribution, which has been demonstrated to be a direct consequence of hedonic material references (Savary, Goldsmith, and Dhar 2015). In other words, although Savary and colleagues (2015) have explored the effect of materially referenced donation appeals on potential donors' willingness to donate, as previously mentioned, they studied material reference under the scope of *recipient-irrelevant*

referenced goods (i.e., how the money can be used on *donors*) and focused on a *communal* scenario (i.e., donation). However, in the current research, I test the effect of *recipient-relevant* material references (i.e., how the money can be used on *recipients*) and focus on an *exchange* scenario (i.e., service). Hence, I predict that the self-signaling function of material reference is unlikely to play a role in the current research. To completely rule out the self-attribution account, I not only empirically rule out the effect of self-attribution in one study (i.e., Study 2A), but also test the proposed effect of materially referenced tip recommendations with both the *hedonic* and *utilitarian* referenced goods—notably, Savary and colleagues (2015) found that the positive effect of materially referenced donation appeal only worked for *hedonic* referenced goods.

Furthermore, since material references offer concrete examples of how the suggested tip amount can be used, according to construal level theory, such concrete examples might induce a closer psychological distance between the customer and the service provider (Duan, Takahashi, and Zwickle 2019; Gu and Chen 2021; Thomas and Tsai 2012). Given that closer psychological distance can boost individuals' willingness to help the target (Touré-Tillery and Fishbach 2017; Wang, Wang, and Jiang 2023), one may suspect that materially referenced tip recommendations increase patrons' tipping likelihood and tip size by reducing the psychological distance between the customer and the tip recipient. However, previous research has shown that the low construal level is not necessarily associated with closer psychological distance (Jia et al. 2017; Snefjella and Kuperman 2015). In addition, even if concrete examples of how the money can be spent did reduce the psychological distance between the customer and the service provider, marketing scholars have demonstrated that the identifiability of the money recipient can moderate the positive effect of

closer psychological distance on the willingness to help (Kogut and Ritov 2011; Small and Loewenstein 2003). Specifically, when money recipients were identifiable, the psychological distance between the money givers and the money recipients should have already been close enough, which eventually attenuates the positive link between shortened psychological distance and helping intention (Kogut et al. 2018). Since the identity of service employees is usually salient to the customer, it is also unlikely that the positive effect of materially referenced tip recommendations on tipping behavior is due to closer psychological distance, even if material references could indeed induce a closer psychological distance between customers and servers. This alternative explanation is empirically ruled out through an experiment (i.e., Study 2A).

In addition, one may argue that materially referenced tip recommendations can make the customer–server relationship more communal, which has been viewed as an important antecedent for positive customer reactions (Goodwin 1996; Wooldridge 1999). Past research has indeed found that goods donation was closely associated with the concept of communality (Gershon and Cryder 2018; Zhao, Chen, and Jin 2023). Since material references link the suggested tip amount with a specific product, it is possible that such a design can stimulate the sense that customers are giving the referenced product to the tip recipient. However, I argue that the referenced products are merely exemplars rather than something that will actually be given to the tip recipient. More importantly, due to the monetary nature and exchange essence of tipping behavior in the service context (Lynn, Zinkhan, and Harris 1993; Shamir 1984), tip solicitation should elicit a more exchange-oriented relationship between the customer and the service provider. It might be difficult for customers to switch their perception of the relationship merely by offering them a different tip recommendation

design. I rule out this alternative account in an empirical study (Study 2A) and also through pretests regarding the exemplification nature of material references.

Moreover, I also rule out several other possible mechanisms that are related to the tip recommendation design as well as the stimuli used in studies. Firstly, one might argue that the design of materially referenced tip recommendations elicits more positive consumer reactions through perceived novelty, given that such a newly emerging design is rare in reality, especially in the Western market. Previous research has found that perceived novelty can positively influence consumers' responses (Kim and Lakshmanan 2015; Lee and Kim 2022). Therefore, it is reasonable to posit that the positive effect of materially referenced tip recommendations on tipping might be attributed to the novelty effect. Besides, one could argue that the perceived financial value of the referenced product may not be the same as the suggested tip amount, as the price of one product can vary across brands and occasions. This variation in valuation might lead customers to behave differently when they encounter materially referenced tip recommendations (Kansal, Walia, and Goel 2015; Wertenbroch, Soman, and Chattopadhyay 2007). Previous literature has indeed shown that the match or mismatch between the subjective value of a product/service and the price could influence consumers' behavior (Grace and O'cass 2005; Souki et al. 2023). Consequently, it is possible that the discrepancy between the perceived financial value of referenced goods and the suggested tip amount could play a role in the process. Other than the above-mentioned alternative explanations, one might believe that materially referenced tip recommendations, by providing additional information about the referenced products and subsequently eliciting more vivid outcome simulation, make customers more engaged in the tip solicitation experience. Given that a higher level of engagement generally harnesses more positive reactions from the audience

(Barasch, Zauberman, and Diehl 2018; Vaughn et al. 2010; Zhou et al. 2024), it is important to examine whether engagement can indeed play a role in the process. In summary, I empirically rule out the aforementioned alternative explanations in an experiment (Study 2B). Finally, one might argue that the presentation of material references can induce more positive emotions among consumers. On the one hand, prior literature has shown that recalling meaningful events could evoke positive feelings (Crego et al. 2020; Schutte et al. 2012; Tavares 2018). The positive affect, in turn, could increase individuals' perception of being treated kindly as well as their intention to engage in prosocial behavior, which could be generalized to the tipping domain (Aknin, Van de Vondervoort, and Hamlin 2018; Hammond and Drummond 2019; Kelley and Hoffman 1997). In addition, one could argue that adding cute, animated icons (see Figure 1 for examples) makes the tipping solicitation process more enjoyable, which can also elicit more positive emotions. However, the meaningfulness that consumers experience in the current tip solicitation scenario is through an imaginative lens. According to prior research, consumers' emotional reactions to hypothetical, imagined scenarios would differ significantly from those in real, experienced scenarios (Ben-Ze'ev 1996; Woodzicka and LaFrance 2002). Therefore, these findings regarding the link between meaningfulness and positive affect may not be directly applicable to the current research context. Therefore, I argue that customers should feel the same level of positive affect regardless of whether they are nudged with tip solicitation pages with material references or with those without material references. I empirically rule this alternative account out by conducting two experiments respectively (i.e., Studies 1C and 2B). Specifically, in Study 1C, I examine whether the effect of materially referenced tip recommendations persists even when no icons are present on the tip solicitation page, which aims to rule

out the potential impact of pictorial elements, whereas in Study 2B, I directly capture participants' affective state.

Last but not least, I also test the possibility that the proposed effect of materially referenced tip recommendations on tipping is driven by customers' reduced level of pain of payment. In the tipping domain, past research has found that the pain of payment could significantly decrease patrons' tipping likelihood and tip size (Chen et al. 2023; Lynn 2015, 2021). As discussed earlier, materially referenced tip recommendations might direct customers' attention to the recipients' lives by inducing more vivid outcome simulation. Consequently, when tip recommendations are embedded with material references, patrons' other-focused attention should be boosted. Therefore, one may speculate that, given the limited attention resources of individuals, the increased attention to the life of tip recipients might help diminish customers' attention to other information, including the financial cost of tipping (Folkes and Matta 2004; Perowne and Mansell 2002; Wilcox and Prokopec 2019). Such inattention to the financial cost of tipping, in turn, can make customers less likely to feel the pain of payment when making tipping-related decisions, as attention to cost is closely related to the painful feelings during the payment process (Chatterjee and Rose 2012; Reshadi 2020; Yeung 2014). However, I argue that, since marketing scholars have demonstrated that material references could serve as an opportunity cost reminder (Frederick et al. 2009), incorporating material references into tip recommendations might highlight the cost of giving the suggested tip amount as well. Therefore, the positive effect of materially referenced tip recommendations is unlikely driven by a reduced level of pain of payment. I rule this pain of payment account out by conducting an empirical study (i.e., Study 2C) that adopts the paradigm from previous tipping literature (i.e., Chen et al. 2023).

CHAPTER 3. EMPIRICAL INVESTIGATION

3.1. OVERVIEW

Nine experiments explore the impact of employing material reference in tip recommendations. Firstly, Study 1 provides initial support for the first hypothesis by demonstrating that materially referenced tip recommendations (i.e., depicting a product that financially equals the suggested tip amount) increase customers' likelihood to tip delivery persons (Studies 1A, 1C) and the tip size (Study 1B) in the US (Study 1A) and China (Study 1B). Additionally, this effect persists when customers are nudged to tip before the service is completed (Studies 1A, 1C). More importantly, Study 1 also explores the effect of materially referenced tip recommendations with text-only material reference (Study 1C), revealing that the effect is not limited to providing pictorial icons regarding referenced goods.

Study 2 confirms the underlying mechanism by revealing the sequential mediating role of vivid mental simulation toward the potential outcomes of tipping (i.e., how the solicited tips can be used) and the perceived meaningfulness of tipping, while speaking against several alternative explanations. Specifically, in Study 2A, I rule out the alternative accounts including self-attribution, psychological distance, and perceived communality of the customer–customer relationships. In Study 2B, I address the possibility that the observed effect of materially referenced tip recommendations on tipping is driven by the perceived novelty of the tipping experiences, the discrepancy between the perceived financial value of referenced goods and the suggested tip amount, level of engagement, and positive affect. Study

2C, based on the research paradigm from Chen and colleagues (2023), rules out the possible role of pain of payment in the process.

The next three studies further examine the proposed mechanism by testing three theoretically and managerially relevant boundary conditions of the observed effect. Specifically, the effect is dismissed when customers are under high cognitive load (Study 3), when they suspect that the company will engage in tip theft (Study 4), and when the relevance of referenced products to service context is low (Study 5). A summary of all studies is provided in Table 1 in Appendix B.

To strengthen the generalizability of the findings, I test the aforementioned hypotheses across a variety of tipping contexts, including food delivery (Study 1), ride-sharing (Studies 2A, 2C), freelance copyediting (Studies 2B, 3), and parcel delivery (Studies 4, 5). For all studies, target sample sizes were determined in advance of data collection based on participant availability, study design, and collection method (Simmons, Nelson, and Simonsohn 2011). In all studies, I include all collected data in the final analyses and do not exclude any participant, and I report all manipulations and measures. Basic demographic measurements (such as gender and age) did not have a systematic impact on the results, so I do not further discuss them in the thesis. Additional details about manipulations and pretests can be found in the Appendices.

3.2. STUDY 1: ESTABLISHING THE BASIC EFFECT ACROSS VARIOUS CONTEXTS AND SETTING-UPS

3.2.1. Overview

Study 1 aims to provide initial evidence for the hypothesis that material references added to tip recommendations increase customers' tipping likelihood and tip size. To enhance the generalizability of these findings, I test the hypothesis in two distinct cultural contexts: the US (with established tipping norms in certain service scenarios; Studies 1A, 1C; Lynn et al. 1993) and China (without tipping norms in general; Study 1B; Chen et al. 2023). Meanwhile, I apply the design to a service scenario ubiquitous in both countries—food delivery. More importantly, while Studies 1A and 1B employ materially referenced tip recommendations with pictorial elements, Study 1C only provides participants with textual information regarding the material reference. This design aims to rule out the possibility that the observed effect is solely induced by providing vivid pictures, thereby strengthening the robustness of my findings.

3.2.2. Study 1A

Two hundred and one US consumers (M_{age} = 41.49, 55.2% female) participated in this study via Amazon Mechanical Turk (MTurk) for a nominal payment. Participants were randomly assigned to one of the two (material reference vs. control) between-subjects conditions.

Participants were asked to imagine that they were ordering a US$20 set meal as dinner using a new food delivery app. They then viewed an app page where they could check out and add tips for the driver who would be responsible for delivering the food (see Appendix C1 for the stimuli). The ordering process and page design were similar to the ordering page of DoorDash, a leading food ordering and delivery platform in the US. In the *control* condition, participants saw the option of adding the

suggested US$4 tip, which was consistent with the practice of DoorDash. In the *material-reference* condition, alongside the suggested tip amount (i.e., US$4), a gas tank icon was presented together with a sentence: "$4 can buy 1 gallon of gas that the driver can use." A separate pretest (N = 50) confirmed that the majority (92.0%) of participants agreed that a gallon of gas was merely an example of how the tip could be used rather than what the driver might actually purchase (see Appendix C2 for details). After viewing the tip solicitation page of the app, participants indicated the likelihood of tipping the driver who delivers the food to them with the suggested US$4 gratuity on a single-item, nine-point scale (1 = "not at all likely," 9 = "very likely"), after which they were instructed to report their demographics including gender and age.

Consistent with my expectation, participants in the *material-reference* condition expressed a higher intention to tip the driver (M = 7.64, SD = 1.56) compared to those in the *control* condition (M = 6.64, SD = 2.25; $F(1, 199) = 13.30$, $p < .001$).

3.2.3. Study 1B

One hundred and ninety-eight Chinese consumers (M_{age} = 24.07, 51.0% female) participated in this study via an online research panel in China for a nominal payment. They were randomly assigned to one of the two (material reference vs. control) between-subjects conditions.

Participants imagined that they had ordered food through a leading Chinese food delivery platform on their mobile phones (see Appendix D1 for the stimuli). After receiving the food, they were satisfied with the delivery service and were redirected to an app page where they could tip the delivery person (see Appendix D2

for the stimuli). Specifically, in the *control* condition, the page displayed three pre-set tip buttons with different suggested tip amounts: CN¥2, CN¥5, and CN¥10 (approx. US$0.3, US$0.7, and US$1.5, respectively), along with an "other amount" button that allowed them to customize the tip amount that they would like to give. In the *material-reference* condition, however, the pre-set tipping buttons featured three material references, respectively: bottled water for CN¥2, fried chicken for CN¥5, hamburger for CN¥10, and a red envelope for the "other amount" button (for visual consistency across buttons). A separate pretest (N = 50) confirmed that, on average, the majority (98.7%) of participants agreed that the referenced products (i.e., bottled water, fried chicken, hamburger) were merely examples of how the tip could be used rather than what the delivery person might actually purchase (see Appendix D3 for details). After viewing the tip solicitation page, participants indicated their intention to tip the delivery person by selecting from the five options—the four buttons shown on the tip solicitation page (i.e., ¥2, ¥5, ¥10, "other amount") plus a "no tip" button. It is noteworthy that the "no tip" option was used to simulate the real-world tipping scenario; participants could simply choose this option and proceed to the next page if they did not want to tip at all. If participants chose "other amount," they then must enter a valid number (i.e., a non-zero number) to proceed. Finally, they were asked to report their gender and age.

I first recoded participants' choices into two categories (1 = tip, 0 = no tip) to form an index for tipping likelihood. A Chi-square analysis revealed a significant effect of materially referenced tip recommendations on tipping likelihood. As expected, participants showed a higher likelihood to tip when the suggested tip amount was materially referenced (90.7%) than when it was not (71.3%; $\chi^2(1) = 12.05$, $p = .001$). The impact of materially referenced tip recommendations on the intended

tip amount was also examined (coded as "0" if the participant chose not to tip). A one-way ANOVA showed that participants in the *material-reference* condition were willing to give larger tips (M = CN¥4.57, SD = 3.64) than those in the *control* condition (M = CN¥2.44, SD = 2.52; F(1, 196) = 23.13, $p < .001$).

3.2.4. Study 1C

Two hundred US consumers (M_{age} = 39.18, 50.5% female) participated in this study via Amazon Mechanical Turk (MTurk) for a nominal payment. Participants were randomly assigned to one of the two (material reference vs. control) between-subjects conditions.

Participants first imagined that they were ordering a US$20 set meal for dinner on a new food delivery app. They then viewed an app page where they could check out and add tips for the driver who would be responsible for delivering the food (see Appendix E1 for the stimuli). The ordering process and page design were similar to the ordering page of DoorDash, a leading food ordering and delivery platform in the US. In the *control* condition, similar to the design of Study 1A, participants viewed the option of adding a US$4 suggested tip. In the *material-reference* condition, in addition to the suggested tip amount (i.e., US$4), a sentence was shown as follows: "$4 is the price of a pack of toast bread." A separate pretest (N = 50) confirmed that the majority (90.0%) of participants viewed the referenced goods (i.e., a pack of toast bread) as merely the example of how the tip could be used but not what the driver might actually purchase (see Appendix E2 for details). After viewing the tip solicitation page of the app, participants indicated their likelihood to tip the driver who would deliver the food to them with the suggested US$4 gratuity on a single-item,

nine-point scale (1 = “not at all likely,” 9 = “very likely”), followed by reporting their age and gender.

Consistent with my expectations, a one-way ANOVA showed that participants indicated a higher intention to tip when the recommended tip amount was materially referenced (M = 7.03, SD = 2.11) than when it was not (M = 6.23, SD = 2.66; F(1, 198) = 5.06, p = .019).

3.2.5. Discussion

Consistent with the basic hypothesis (i.e., H1), Study 1 revealed that customers were more inclined to tip when the tip recommendation was materially referenced (i.e., depicting a product that financially equals the suggested tip amount) than when it was not. The effect persisted no matter whether participants were nudged to tip before the service was completed (Studies 1A and 1C) or after its completion (Study 1B). Moreover, Study 1 also showed an increase in tip size when the tip recommendation was materially referenced (Study 1B).

In addition, because past literature indicates that adding pictures of the referenced goods can lead to higher imagery vividness (Argyriou 2012), to rule out the possibility that the observed effect of materially referenced tip recommendations on tipping is solely due to adding pictorial elements, Study 1 replicated the observed effect with text-only material references (Study 1C). Specifically, the cover story, procedure, suggested tip amount, and measure remained the same as those in Study 1A, with the only two changes being the referenced product (from gas to toast bread) and the presentation format of material reference (from picture-and-text to text-only). The successful replication of the previous findings in Study 1C suggests that the

impact of materially referenced tip recommendations is not limited to pictorial material references. Meanwhile, Study 1C also indirectly addresses the alternative explanation that participants are more likely to tip and tip more when nudged with materially referenced tip recommendations simply because the graphic nature of material reference makes the tipping experience more engaging and fun, as only verbal information was included in the manipulation of materially referenced tip recommendations in Study 1C.

More importantly, despite the substantial differences in the existence versus non-existence of established tipping norms between the two countries where Studies 1A and 1B were conducted, respectively (i.e., the US vs. China), the convergent findings across studies indicate that the hypothesized effect is likely to persist across different tipping cultures. Given that Study 1 has established the basic effect of materially referenced tip recommendations on tipping, the following study explores the underlying mechanism of the observed effect.

3.3. STUDY 2: EXPLORING THE UNDERLYING MECHANISM AND FURTHER RULING OUT ALTERNATIVE EXPLANATIONS

3.3.1. Overview

Study 2 aims to examine the underlying mechanism of the observed effect of materially referenced tip recommendations on tipping and to rule out several alternative accounts related to the construct itself as well as the study design. Drawing on previous literature on tipping, material reference, outcome simulation, and meaningfulness (Florian et al. 2019; Lynn 2018; Savary et al. 2015; Zhao, Hoeffler,

and Zauberman 2011), I predict that materially referenced tip recommendations will help customers vividly imagine the possible outcomes of their tipping behavior (i.e., how the gratuities can be used on service employees), which, in turn, increases the perceived meaningfulness of tipping the server, and eventually encourages customers to become more inclined to tip as well as to leave larger tips.

Specifically, Study 2A aims to capture the serial mediation role of vivid outcome simulation and the perceived meaningfulness of tipping behavior, while empirically ruling out the effect of self-attribution, psychological distance, and perceived communality of the patron–recipient relationship. Studies 2B and 2C, on the other hand, solely focus on ruling out the alternative accounts, which offers indirect support for the proposed mechanism that the effect is sequentially driven by vivid outcome simulation and perceived meaningfulness of tipping. Specifically, Study 2B provides empirical evidence to speak against the alternative explanations including the perceived novelty of tipping experiences, the discrepancy between the perceived financial value of referenced goods and the suggested tip amount, the level of engagement during the tip solicitation experience, and consumers' affective reactions. Meanwhile, Study 2C aims to rule out the possibility that the effect is driven by the pain of payment in the tipping process by adopting the research paradigm of Chen and colleagues (2023).

3.3.2. Study 2A

Two hundred and two US consumers (M_{age} = 40.15, 42.6% female) participated in this study via Amazon Mechanical Turk (MTurk) for a nominal payment. Participants were randomly assigned to one of the two (material reference

vs. control) between-subjects conditions.

Participants were asked to imagine that they had used a new ride-sharing app and were satisfied with the driver's services. After the ride, they were redirected to the app page where they could tip the driver (see Appendix F1 for the stimuli). The page was similar to the setup of the tip solicitation page of Uber, a leading ride-sharing platform in the US. In the *control* condition, the option of adding a US$1 suggested gratuity was presented together with the sentence "To thank the driver's service with $1," which was based on the practice of Uber. In the *material-reference* condition, in addition to the same suggested tip amount (i.e., US$1), a bottled-water icon was added, accompanied by the sentence, "To thank the driver's service with $1. $1 is roughly the price of a bottle of water that the driver can enjoy." A separate pretest (N = 52) confirmed that all (100.0%) participants agreed that the bottled water was merely an example of how the tip could be used rather than what the driver might actually purchase, which once again confirmed the exemplification nature of material references in the current research context (see Appendix F2 for details).

After viewing the tip solicitation page, participants indicated their likelihood to tip the driver with the suggested US$1 on the same single-item, nine-point scale as in previous studies (1 = "very unlikely," 9 = "very likely"). To further rule out the alternative explanations, they also reported on the vividness of outcome simulation ("How vividly could you imagine how the solicited tip could be used?"; 1 = "not at all," 9 = "very much;" adapted from De Visser-Amundson, Peloza, and Kleijnen 2021) and the perceived meaningfulness of their tipping behavior ("I felt that I would be doing something meaningful if I chose to tip the driver"; 1 = "strongly disagree," 9 = "strongly agree;" adapted from Reed et al. 2016). Finally, to rule out the alternative explanations, participants indicated their level of self-attribution (e.g., "I am a good

person;" 1 = "strongly disagree," 9 = "strongly agree;" α = .962; adapted from Savary et al. 2015; see Appendix F3 for the full scale), their psychological distance to the tip recipient (1 = "very distant," 9 = "very close;" adapted from Ward and Broniarczyk 2011), and the perceived communality of their relationship with the driver (e.g., "To what extent do you think the driver is like a close friend;" 1 = "not at all," 9 = "very much;" α = .962; adapted from Leung, Kim, and Tse 2020; see Appendix F3 for the full scale). Finally, they indicated their demographic information, including gender and age.

Replicating the results of previous studies, I found that participants indicated a higher intention to tip the driver when the suggested tip amount was materially referenced (M = 8.09, SD = 1.17) than when it was not (M = 7.17, SD = 2.51; F(1, 200) = 11.20, p = .001). As expected, participants in the *material-reference* condition reported more vivid outcome simulation (M = 6.35, SD = 1.42) than those in the *control* condition (M = 5.69, SD = 2.78; F(1, 200) = 4.58, p = .034). Participants in the *material-reference* condition also believed that their tipping behavior would be more meaningful (M = 7.20, SD = 1.54) compared to those in the *control* condition (M = 6.39, SD = 2.34; F(1, 200) = 8.41, p = .004). Mediation analyses with PROCESS model 6 (Hayes 2017; with 5,000 bootstrapped samples) confirmed the proposed sequential mediation model (i.e., "material reference → vividness of outcome simulation → perceived meaningfulness → tipping likelihood;" indirect effect = .19, SE = .11, CI_{95} = [.01, .42]).

As for the alternative explanations, a series of one-way ANOVAs found that materially referenced tip recommendations had no significant effect on self-attribution ($M_{material\text{-}reference}$ = 6.69, SD = 2.01 vs. $M_{control}$ = 6.49, SD = 2.02; F < 1, p = .478), psychological distance ($M_{material\text{-}reference}$ = 4.73, SD = 2.59 vs. $M_{control}$ = 4.30, SD =

2.48; F(1, 200) = 1.42, p = .234), and the perceived communality of the customer–server relationship ($M_{material\text{-}reference}$ = 4.07, SD = 2.68 vs. $M_{control}$ = 3.51, SD = 2.45; F(1, 200) = 2.38, p = .125). In addition, the effect of materially referenced tip recommendations on tipping likelihood remained significant (p = .001) when self-attribution, psychological distance, and perceived communality were included as covariates in the analysis.

3.3.3. Study 2B

Two hundred and one US consumers (M_{age} = 43.03, 54.7% female) participated in this experiment via Amazon Mechanical Turk (MTurk) for a nominal payment. As in previous studies, participants were randomly assigned to the conditions of a 2-cell (material reference vs. control) between-subjects design.

Participants were presented with a language editor's personal page on a freelancing website (see Appendix G1 for the stimuli). They were instructed to imagine that they were seeking a new job and had chosen to hire this freelancer to assist in polishing their résumé for US$50, and they were very satisfied with the delivered work. Participants were then shown a webpage where they could tip the freelancer (see Appendix G2 for the stimuli), the design of which resembled the setup of the tip solicitation page of Fiverr, a leading freelancing services platform based in Israel. In the *control* condition, the webpage showed the option of giving the US$5 suggested tip. In the *material-reference* condition, in addition to the suggested tip amount (i.e., US$5), the icon of a cup of coffee was included on the webpage. In addition, a separate pretest (N = 52) confirmed that the majority (96.2%) of participants agreed that the cup of coffee was merely an example of how the tip could

be used rather than what the freelancer might actually purchase (see Appendix G3 for details).

After viewing the webpage, participants indicated their likelihood to tip the editor with the suggested US$5 gratuity on the same single-item, nine-point scale as in previous studies (1 = "not at all likely," 9 = "very likely"). To rule out the aforementioned alternative accounts, they were also asked to indicate the perceived novelty of the tipping experiences (e.g., "It satisfies my sense of curiosity;" 1 = "not agree at all," 9 = "fully agree;" $\alpha = .976$; adapted from Bergner, Hildebrand, and Häubl 2023; see Appendix G4 for the full scale), the perceived value for money of a cup of coffee sold at the price of US$5 (e.g., "To what extent do you think that a cup of coffee sold at the price of $5 is reasonably priced;" 1 = "not at all," 9 = "very much;" $\alpha = .971$; adapted from Sweeney and Soutar 2001; see Appendix G4 for the full scale), the level of engagement during the tip solicitation experience (e.g., "The tip solicitation experience was engaging;" 1 = "not at all," 9 = "very much so;" $\alpha = .925$; adapted from Bhattacharjee, Berger, and Menon 2014; see Appendix G4 for the full scale), and Positive and Negative Affect Schedule scale (i.e., PANAS; 1 = "very slightly," 9 = "extremely;" for positive affects, $\alpha = .916$; for negative affects, $\alpha = .911$; adapted from Watson, Clark, and Tellegen 1988; see Appendix G4 for the full scale). The first three scales are all four-item, nine-point scales, whereas the PANAS scale is a twenty-item, nine-point scale. After that, they reported their gender and age.

A one-way ANOVA revealed that, as expected, participants in the *material-reference* condition reported a significantly higher level of tipping likelihood ($M = 5.40$, $SD = 3.13$) than those in the *control* condition ($M = 4.22$, $SD = 2.78$; $F(1, 199) = 7.92$, $p = .005$). More importantly, I found that material reference had no significant effect on the perceived novelty of the tipping experiences ($M_{material\text{-}reference} = 3.48$, SD

= 2.52 vs. $M_{control}$ = 3.30, SD = 2.65; F < 1, p = .632), the perceived value for money of one cup of coffee sold at US$5 ($M_{material\text{-}reference}$ = 4.72, SD = 2.66 vs. $M_{control}$ = 4.49, SD = 2.50; F < 1, p = .537), and the level of engagement when facing tip request ($M_{material\text{-}reference}$ = 3.92, SD = 2.40 vs. $M_{control}$ = 3.63, SD = 2.43; F < 1, p = .399). Regarding consumers' emotional reactions, the analysis indicated that materially referenced tip recommendations neither significantly reduced customers' negative affect ($M_{material\text{-}reference}$ = 2.42, SD = 1.39 vs. $M_{control}$ = 2.74, SD = 1.56; F(1, 199) = 2.46, p = .118) nor significantly increased the felt positive affect ($M_{material\text{-}reference}$ = 4.86, SD = 1.90 vs. $M_{control}$ = 4.90, SD = 1.96; F < 1, p = .902). In addition, the effect of materially referenced tip recommendations on tipping likelihood held (p = .007) when perceived novelty, perceived value for money, level of engagement, and affects were included as covariates in the analysis.

3.3.4. Study 2C

Two hundred and one US consumers (M_{age} = 39.87, 52.2% female) participated in this study via Amazon Mechanical Turk (MTurk) for a nominal payment. Participants were randomly assigned to one of the two (material reference vs. control) between-subjects conditions.

The majority of the process and stimuli resembled those used in Study 2A. Specifically, participants once again were instructed to imagine that they had used the aforementioned ride-sharing app and were satisfied with the experience of the ride. After they had arrived at the destination, they were redirected to the tip solicitation page on the app (see Appendix F1 for the stimuli), which was consistent with the setup of the tip solicitation page I used in Study 2A. However, unlike Study 2A, in

this study, participants were asked to imagine that the fare of the ride would be covered by their employer since it was a business trip. The research paradigm was adapted from previous literature investigating the role of the pain of payment in tipping behavior (i.e., Chen et al. 2023). For the manipulation of tip recommendation design, similar to the manipulation in Study 2A, in the *control* condition, I displayed the option to add a US$1 suggested gratuity with the sentence "To thank the driver's service with $1." In the *material-reference* condition, I used the same stimuli as in Study 2A, with one sentence added below the suggested tip amount (i.e., US$1), accompanied by the icon of bottled water: "To thank the driver's service with $1. $1 is roughly the price of a bottle of water that the driver can enjoy." After viewing the tip solicitation page, participants indicated their likelihood to tip the driver with the suggested US$1 on the same single-item, nine-point scale as in previous studies (1 = "very unlikely," 9 = "very likely") and reported their demographic information including gender and age.

Replicating the results of Study 2A, a one-way ANOVA revealed that participants indicated a higher tipping likelihood when the tip recommendation was materially referenced (M = 7.87, SD = 2.02) compared to when it was not (M = 7.12, SD = 2.87; F(1, 199) = 4.60, p = .033).

3.3.5. Discussion

Study 2 provides direct evidence for the proposed underlying mechanism of the observed effect. Specifically, consistent with the predictions, materially referenced tip recommendations helped customers vividly simulate the possible outcomes of tipping (i.e., what recipients could get if they received a gratuity). The heightened

outcome simulation, in turn, increased the perceived meaningfulness of their tipping behavior, thereby leading to a higher likelihood of tipping.

The results of Study 2 also addressed several alternative explanations. First, the insignificant effect of materially referenced tip recommendations on self-attribution provided empirical evidence for the argument that the current research differs significantly from that of Savary et al. (2015) in terms of the underlying mechanism. Although Savary and colleagues (2015) explored the effect of material reference in the prosocial domain, they focused exclusively on referenced goods *irrelevant* to the donation appeals; in other words, material references in the above-mentioned research informed how the money could be spent on donors themselves rather than on the help recipients. Hence, it is reasonable to expect that material references could serve as a signal of potential donors' self-image. On the contrary, the current research investigates the effect of material reference from the perspective of referenced goods *relevant* to tip recipients and demonstrates the benefit of tipping to tip recipients, which renders the self-signaling function less central to potential patrons nudged with materially referenced tip recommendations.

Second, I found in Study 2A that adopting materially referenced tip recommendations did not shorten the customers' psychological distance toward service employees. This spoke against the possibility that materially referenced tip recommendations could lead to a closer psychological distance between the customer and the service employee, since past research suggested that material reference, as an exemplar, contains more concrete information (Bigsby, Bigman, and Gonzalez 2019; Frederick et al. 2009).

Third, Study 2A showed that adding the referenced goods did not result in differences in the communality perception of the patron–server relationship, which

means that materially referenced tip recommendations differ from the sense of in-kind donation conceptually. This echoes the results of the pretests regarding the exemplification nature of material references, which seek to ensure that participants do consider material references as mere exemplars of how the solicited tips can be used. Specifically, on average, 96.6% of participants successfully recognized the exemplification nature of material references adopted across the 9 studies (see Appendix for details).

In addition, Study 2B empirically examined whether customers' perceptions of novelty in the tipping experiences could drive the observed effect. Surprisingly, though materially referenced tip recommendations are very rare in US consumers' daily lives, I did not find a significant difference in the perceived novelty of the tipping experiences. The insignificant results could possibly be attributed to the fact that only a few MTurkers had ever used a freelancing website, which makes tipping the freelancer itself a unique experience and creates a ceiling effect. While this will not affect the conclusion that the observed effect of materially referenced tip recommendations is not driven by novelty perception toward the tipping experiences, I measured participants' patronage frequency of freelancing websites in Study 3. It also employed the scenario of tipping a freelancer, allowing me to explore my speculation and control for this potential covariate that might influence customers' tipping behavior (Lynn 2021; Sánchez 2002).

Furthermore, the result of Study 2B also spoke against the possibility that the discrepancy between the perceived financial value of referenced goods and the suggested tip amount could explain the observed effect of materially referenced tip recommendations on tipping, since there was no significant effect of materially referenced tip recommendations on the perceived value for money of a cup of coffee

priced at US$5. Interestingly, although the analysis revealed that consumers in the control condition did believe that one cup of coffee sold at US$5 was not very economical (one sample t-test against midpoint: t(99) = -2.03, p = .045), exposure to materially referenced tip recommendations successfully attenuated this tendency (one sample t-test against midpoint: t(100) = -1.07, p = .290), which suggested that exposure to materially referenced tip recommendations might influence consumers' subjective valuation.

Moreover, Study 2 confirmed that neither the level of engagement nor affect could account for the observed effect of materially referenced tip recommendations on tipping. The results of Study 2B indicated that adding material references to the tip recommendations did not significantly increase participants' level of engagement or significantly influence the valence of affects they felt. Since text format is unlikely to substantially increase customers' level of engagement or evoke emotional reactions (Adelaar et al. 2003; Ulbig 2010), the results of Study 1C that the effect of materially referenced tip recommendations persisted under verbal material references indirectly countered these two alternative accounts.

Last but not least, Study 2 ruled out the effect of pain of payment in the underlying process, as Study 2C, by adopting the paradigm from previous research (i.e., Chen et al. 2023), revealed that the significant effect of materially referenced tip recommendations on tipping likelihood persisted even when individuals did not need to pay for the ride by themselves. The results of Study 2C echoed the conclusion from previous literature that the positive effect of tipping motives can sometimes override the negative effect of the pain of payment (Kakkar and Li 2022; Lynn 2015). Considering the evidence as a whole, I believe that it is less likely the observed effect is driven by one or all of these alternative mechanisms, which also offers further

support for the proposed process.

3.4. STUDY 3: EXPLORING MODERATING ROLE OF COGNITIVE LOAD

3.4.1. Overview

In Study 3, I aim to test a potential moderator of the observed effect from the perspective of the underlying mechanism: cognitive load. Numerous studies have demonstrated that high cognitive load impairs the ability to develop vivid mental imagery (e.g., Cian, Longoni, and Krishna 2020; Sinha and Lu 2019). Since I argue that the influence of materially referenced tip recommendations on tipping depends on the vividness of patrons' mental simulation regarding the possible outcome of tipping the service employee, I predict that the observed effect will be attenuated or eliminated when customers are cognitively busy. Study 3 explores this possibility. In addition, I aim to control for another covariate that might influence customers' tipping (Alexander, Boone, and Lynn 2021): the frequency of using the services in their daily lives. This can also help investigate the speculation documented in Study 2 regarding the insignificant effect of material reference on the perceived novelty of the tipping experiences.

3.4.2. Method

Four hundred US consumers (M_{age} = 40.55, 52.0% female) participated in this experiment via Amazon Mechanical Turk (MTurk) for a nominal payment. They were randomly assigned to conditions of a 2 (material reference vs. control) × 2 (high

cognitive load vs. low cognitive load) between-subjects design.

First, to manipulate cognitive load, participants were instructed to engage in a memory task in which they were tasked with memorizing either a shorter, two-digit number (the *low-cognitive-load* condition) or a longer, ten-digit number (the *high-cognitive-load* condition) throughout the research session without writing it down. They were also informed that they would be required to provide the number at the end of the session, though their payment would not be influenced by the correctness of the answer. This method has been widely adopted by consumer researchers (e.g., Rottenstreich, Sood, and Brenner 2007; Sinha and Lu 2019) as a manipulation of cognitive load.

Next, as a purportedly separate task, participants underwent the same procedure as in Study 2B, and the stimuli used in this experiment also remained consistent with Study 2B. To elaborate, participants were shown a language editor's personal page on a freelancing website (see Appendix G1 for the stimuli). They received the same instruction as in Study 2B, to imagine that they recruited this freelancer to refine their résumé and were very satisfied with the final work. They were then redirected to the same tipping page as in Study 2B. Specifically, in the *control* condition, they were shown the US$5 suggested tip. In the *material-reference* condition, the suggested tip amount (i.e., US$5) was accompanied by the icon of a cup of coffee.

After viewing the tip solicitation page, participants indicated their likelihood to tip the freelancer with the suggested US$5 gratuity on the same single-item, nine-point scale adopted in previous experiments (1 = "not at all likely," 9 = "very likely"). Then, participants completed the manipulation check of cognitive load (i.e., "Please indicate the extent of mental effort you exerted to keep the number in memory during

the previous few minutes/How busy was your mind when trying to keep the number in memory during the previous few minutes;" 1 = "did not exert mental effort at all/my mind was not busy at all," 9 = "exerted a lot of mental effort/my mind was extremely busy;" r = .85, $p < .01$; Monga and Houston 2006) and their usage frequency of freelancing platforms (i.e., "How frequently do you use freelancing platforms such as Fiverr, PeoplePerHour, Freelancer.com, and Upwork?"; 1 = "very infrequently," 9 = "very frequently"), respectively, before reporting their gender and age.

3.4.3. Results and Discussion

As expected, participants in the *high-cognitive-load* condition reported significantly higher levels of mental effort and busyness (M = 7.29, SD = 1.67) compared to those in the *low-cognitive-load* condition (M = 3.15, SD = 2.15; $F(1, 396) = 464.37$, $p < .001$).

More importantly, a 2 (material reference vs. control) × 2 (high cognitive load vs. low cognitive load) between-subjects ANOVA yielded a significant main effect of cognitive load ($F(1, 396) = 9.03$, $p = .003$) and a marginally significant effect of material reference ($F(1, 396) = 2.92$, $p = .088$), characterized by a significant interaction ($F(1, 396) = 4.32$, $p = .038$). Specifically, I replicated the previous pattern in the *low-cognitive-load* condition. In other words, participants indicated a higher intention to tip when the suggested tip was materially referenced (M = 6.51, SD = 2.61) than when it was not (M = 5.41, SD = 3.17; $F(1, 396) = 7.06$, $p = .008$). In the *high-cognitive-load* condition, however, the effect of material reference on customers' tipping likelihood was dismissed ($M_{material\text{-}reference} = 5.03$, SD = 2.90 vs. $M_{control} = 5.14$,

SD = 2.91; F < 1). The significant two-way interaction persisted when usage frequency was included as the covariate (p = .040; see Appendix H1 for detailed analysis).

I hypothesize that materially referenced tip recommendations help customers vividly simulate the outcome of tipping the service employee, thereby increasing the perceived meaningfulness of tipping and, consequently, customers' likelihood to tip. Consistent with this proposed mechanism, the results of Study 3 revealed that the effect of materially referenced tip recommendations on tipping was dismissed when participants underwent high cognitive load. Given that high cognitive load impedes the development of vivid mental imagery (e.g., Petrova and Cialdini 2005; Sinha and Lu 2019), the results of Study 3 strongly supported the proposed outcome simulation account. In addition, I found that the observed effect persisted when controlling for customers' usage frequency of the services, and they indeed did not use the freelancing website frequently (M = 2.14, SD = 2.06; one sample t-test against midpoint: t(399) = -27.71; p < .001; d = 1.39), which could help explain the insignificant effect of materially referenced tip recommendations on the perceived novelty of the tipping experiences in Study 2B.

3.5. STUDY 4: EXPLORING MODERATING ROLE OF SUSPICION OF TIP THEFT

3.5.1. Overview

In Study 4, I intend to test another boundary condition of the proposed effect, inspired by the recent scandals regarding the misuse of solicited tips (e.g., Ghaffary

2019; Moyer 2020). Since customers tend to overgeneralize the deviant behavior of one specific company to other similar companies (Goldstein et al. 2008; Jonsson et al. 2009), learning about instances in which some companies misappropriate solicited tips may lead customers to infer that the tips they give will also not fully go to the servers (i.e., misused by the company). Such suspicions might cause them to view the tipping behavior as less meaningful, as prior research in the organizational behavior domain has found that the meaningfulness of helping behavior will decrease when the recipient does not fully receive the benefits of the help (Grant 2007). As a result, I predict that the observed effect will be attenuated or eliminated when customers suspect that the tips will not fully go to the recipients (i.e., companies engaging in tip theft). Study 4 tests this possibility.

3.5.2. Method

Three hundred and ninety-eight US consumers (M_{age} = 41.06, 54.3% female) participated in this experiment via Amazon Mechanical Turk (MTurk) for a nominal payment. They were randomly assigned to one of the four conditions of a 2 (material reference vs. control) × 2 (suspicion of tip theft vs. control) between-subjects design.

I first manipulated customers' suspicion regarding tip theft under the cover of the reading comprehension task (see Appendix I1 for the stimuli). Participants in the *suspicion-of-tip-theft* condition read an article about tipping-related misconduct (i.e., tip theft), whereas those in the *control* condition read an article about shoplifting. The topic of these two articles was kept indirections identical to avoid the difference in emotional valence between them. A separate pretest (N = 102) confirmed that the news report in the *suspicion-of-tip-theft* condition led the readers to suspect that, for

other companies, not all tips would go to the recipient ($p < .001$; see Appendix I3 for details). After reading the article, to boost the credibility of the cover story, participants indicated to what extent they thought the article was difficult to comprehend on a single-item, nine-point scale (1 = "not difficult at all," 9 = "very difficult").

Then, as an ostensibly unrelated task, participants were asked to imagine that their parcel was delivered by a new courier company, and they were satisfied with the service provided. Next, they were directed to an app page where they could tip the individual courier (see Appendix I2 for the stimuli), adapted from the tip solicitation page of Amazon Prime Now. In the *control* condition, they were shown the option of giving a US$5 gratuity. In addition to the suggested tip amount, in the *material-reference* condition, there was also an icon of a sandwich (as the referenced product) on the page. A separate pretest (N = 46) confirmed that the majority (91.3%) of participants agreed that the sandwich was merely an example of how the tip could be used rather than what the courier might actually purchase (see Appendix I4 for details). After viewing the webpage, participants indicated their likelihood to tip the courier with the suggested US$5 tip on the same single-item, nine-point scale employed in previous studies (1 = "not at all likely," 9 = "very likely").

3.5.3. Results and Discussion

First of all, there was no significant effect of material reference and news report topic on the perceived difficulty in comprehension (ps > .08). In addition, a two-way ANOVA on tipping likelihood revealed an insignificant main effect of news report topic ($F(1, 394) = 2.29$, $p = .131$) but a significant main effect of material

reference (F(1, 394) = 3.98, p = .047), characterized by a significant two-way interaction (F(1, 394) = 5.05, p = .025). Specifically, when the news report was about shoplifting (i.e., irrelevant to tip theft), participants in the *material-reference* condition indicated a higher tipping likelihood (M = 6.51, SD = 2.40) than those in the *control* condition (M = 5.34, SD = 2.82; F(1, 394) = 8.87, p = .003). However, participants' tipping likelihood did not differ significantly when they read the news report regarding the tip theft ($M_{material\text{-}reference}$ = 5.48, SD = 2.76 vs. $M_{control}$ = 5.54, SD = 2.91; F < 1, p = .857), no matter whether they were nudged with number-only tip recommendations or materially referenced tip recommendations. The effect persisted when the perceived difficulty of comprehension was included as a covariate (p = .022; see Appendix I5 for details).

Study 4 lends further support to the proposed mechanism that the perceived meaningfulness of tipping underscores the observed effect. The results of this study revealed that the positive effect of materially referenced tip recommendations on tipping disappeared when customers suspected that the tips might not fully go to the servers (i.e., the company engaging in tip theft), presumably because the misappropriation of solicited tips lowered the perceived benefit of tipping, which eventually reduced the meaningfulness derived from tipping the service worker.

3.6. STUDY 5: EXPLORING MODERATING ROLE OF RELEVANCE OF REFERENCED PRODUCTS TO THE SERVICE CONTEXT

3.6.1. Overview

In Study 5, I aim to test another boundary condition of the proposed effect. I

predict that the observed effect will hold only when the referenced product is relevant to the focal service context or, more specifically, to the fulfillment of the server's job duties (e.g., gas for drivers, bottled water for the delivery person). Prior research has shown that perceived meaningfulness is positively related to the goal pursuit effort relevant to the focal goal (Touré-Tillery and Fishbach 2011; van Tilburg and Igou 2013). Therefore, if the perceived relevance of the referenced product to the focal service context is low (e.g., balloon to the delivery person), the referenced product may not increase the perceived meaningfulness of tipping behavior, as they are not directly related to the focal goal of service providers (i.e., delivering the services; Hellström and Revi 2019). Consequently, patrons' tipping behavior should not be influenced. Study 5 tests this possibility.

3.6.2. Method

Three hundred Chinese consumers (M_{age} = 29.23, 63.7% female) participated in this experiment via Credamo, a Chinese online research panel (https://www.credamo.com), for a nominal payment. They were randomly assigned to one of three (high-relevance-reference vs. low-relevance-reference vs. control) between-subjects conditions.

Participants imagined that they received a parcel delivered by the courier and were satisfied with the delivery service. They were then directed to an app page where they could tip the delivery person (see Appendix J1 for the stimuli). The page was similar to the tip solicitation page of Cainiao, a leading parcel delivery service provider in China. In the *control* condition, the app page featured a CN¥3 (approx. US$0.4) gratuity guideline, together with an icon of the bill. In addition to tip

recommendations, in the *high-relevance-reference* condition, an icon of a fried chicken was added on the app page, whereas in the *low-relevance-reference* condition, the fried-chicken icon was replaced by the icon of a balloon. After viewing the picture, participants indicated their likelihood to tip the delivery person with the suggested CN¥3 tip, on the same single-item nine-point scale as in previous studies (1 = "very unlikely," 9 = "very likely"). Finally, they reported their age and gender.

3.6.3. Results and Discussion

As expected, a one-way ANOVA revealed a significant effect of material reference ($F(2, 297) = 19.07$, $p < .001$). Participants in the high-relevance-reference condition showed a higher tipping intention ($M = 6.35$, $SD = 2.10$) than those in the low-relevance-reference condition ($M = 4.55$, $SD = 2.32$; $t(198) = 5.76$, $p < .001$) and those in the control condition ($M = 4.90$, $SD = 2.13$; $t(198) = 4.85$, $p < .001$). However, tipping likelihood did not differ significantly between the latter two conditions ($t(198) = 1.11$, $p = .268$).

Study 5 supports the proposed mechanism that vivid outcome simulation and perceived meaningfulness of tipping underscore the observed effect. The results revealed that the effect of materially referenced tip recommendations on tipping disappeared when the perceived relevance of the referenced product to the focal service context was low (e.g., balloon for the delivery person), presumably because such unimportant material references could not increase the perceived meaningfulness derived from tipping the service employees. In addition, the results reaffirmed that the effect of material reference was not due to adding the pictorial element, which made the materially referenced tip recommendations more unique, engaging, or enjoyable,

as the control condition included an icon of the paper money.

CHAPTER 4. GENERAL DISCUSSION

4.1. SUMMARY OF FINDINGS

Based on a series of nine experiments, this thesis identified the effect of incorporating material reference (i.e., referencing a product that financially equals the suggested tip amount) in tip recommendations on consumers' tipping behavior across various service contexts. Specifically, Studies 1A and 1B revealed that both American (Studies 1A, 1C) and Chinese (Study 1B) consumers were more likely to tip the delivery person when materially referenced tip recommendations were incorporated into the design of tip solicitation pages. More importantly, Study 1C generalized the observed effect by showing that text-only material references could still significantly increase customers' tipping likelihood. Notably, Studies 1A and 1C, by requesting customers to tip while placing the order, also ruled out one confounding factor—customers' level of satisfaction with the services.

Study 2 tapped into the underlying process. On the one hand, Study 2A directly demonstrated the serial mediation role of vivid outcome simulation and the perceived meaningfulness of tipping in the observed effect, while speaking against the alternative accounts including self-attribution, psychological distance, and perceived communality of the customer–server relationship. On the other hand, Studies 2B and 2C focused on addressing alternative explanations, including the perceived novelty of the tipping experiences (Study 2B), the discrepancy between the perceived financial value of referenced goods and the suggested tip amount (Study 2B), level of

engagement (Study 2B), affect (Study 2B), and pain of payment (Study 2C). Studies 3, 4, and 5 revealed three theoretically and managerially relevant boundary conditions. Specifically, the observed effect diminished when customers were under high cognitive load (Study 3), when they suspected that tips might not fully go to the servers (i.e., companies engaging in tip theft; Study 4), and when the referenced product was not relevant to the focal service context (Study 5). In addition, I also found that customers' patronage frequency of services had no significant effect on the observed effect (Study 3).

4.2. THEORETICAL CONTRIBUTIONS

The thesis makes significant contributions to the extant literature across various topics. Firstly, the current research adds to the growing body of literature on tipping behavior (e.g., Azar 2020; Bluvstein and Raghubir 2021; Chen et al. 2023; Lynn 2017; Rifkin, Du, and Berger 2021) by revealing a novel contextual factor to increase tipping—materially referenced tip recommendations. Unlike previous research on tip recommendations, which primarily focused on number-only tip recommendations and how to increase the effectiveness of such tip recommendations by manipulating the numerical attributes of the suggested tip amount (e.g., Alexander et al. 2021; Bluvstein and Raghubir 2021; Haggag and Paci 2014), in the current work, I propose a practically feasible yet not widely adopted method to design effective tip recommendations—providing material references for suggested tip amount—and hence move beyond the traditional research scope for tip recommendation design. In addition, this thesis also broadens our understanding of how to encourage customers

to tip through the prosocial lens (e.g., Frank 2020), as I identify a new motivator for tipping: the perceived meaningfulness of tipping.

The current research also extends the emerging literature on material reference. Although material reference is gaining popularity in the business world, only a handful of research works have examined its influence on consumer behavior (e.g., Frederick et al. 2009; Friedman, Savary, and Dhar 2018; Savary, Goldsmith, and Dhar 2015). The current work not only extends the research on material reference to a new exchange-based research context, tipping, but also explores a new consequence of material reference from an other-focused perspective by connecting it with vivid mental simulation (e.g., Ülkümen and Thomas 2013; Zhao, Hoeffler, and Zauberman 2011) and perceived meaningfulness (e.g., Donnelly et al. 2017; Reed et al. 2016; Yang, Hsee, and Urminsky 2019). In addition, for the first time, the current work empirically examines the exemplification nature of material reference and demonstrates that it is conceptually distinct from providing information about how the money will be used (Gu and Chen 2021) or priming the concept of in-kind donation (Gershon and Cryder 2018). Finally, this thesis differs from the research of Savary and colleagues (2015) in several respects, including the nature of referenced goods (i.e., hedonic, relevant to self vs. both hedonic and utilitarian, relevant to money recipients), the underlying mechanism (i.e., self-signaling vs. outcome simulation and meaningfulness), and the research context (i.e., communality-based donation vs. exchange-based tipping). These distinctions contribute to a nuanced understanding of the role of material reference in various marketing-related scenarios.

Moreover, the current work also contributes to the literature on perceived meaningfulness (e.g., Olivola and Shafir 2013; Reed et al. 2016; Yang, Hsee, and Urminsky 2019; Zhao, Hoeffler, and Zauberman 2011). While existing studies suggest

that perceived meaningfulness, as a motive for behavior, may stem from a hypothetical and imaginative perspective (Florian et al. 2019), they lacked quantitative evidence and a clear causal inference. Bridging this gap in the literature, the current work provides causal, quantitative evidence, demonstrating that vividly imagining the consequences of one's actions facilitates the development of meaningfulness, which, in turn, leads to a greater willingness to engage in such actions. Therefore, the current research offers valuable insights into the antecedents of heightened perceived meaningfulness.

4.3. MANAGERIAL IMPLICATIONS

Although number-only tip recommendations have gained traction in the service sector, their effectiveness remains unclear and appears to be subject to various factors. For instance, even when nudged with such tip recommendations, customers tend to skip tipping under various service scenarios (Chandar et al. 2019; Strohmetz and Rind 2001). By providing a feasible and innovative way to design tip recommendations, the current research yields critical implications for individual tip recipients, platforms and companies in the service sector or with tip-solicitation functions, customers, as well as society as a whole.

For service employees whose livelihoods depend on tips and who would like to solicit additional gratuities, incorporating material references when requesting tips can be an effective way to achieve their goals. For example, a barber might add a sentence such as "Leave $3 and buy me a sandwich!" on a card and place it in a highly noticeable place to solicit more tips. According to the current research, these simple moves can have a substantial impact on customers' tipping behavior, especially

in industries or geographical regions in which tipping as a social norm is absent (which means that the servers usually receive few tips before using materially referenced tip recommendations).

For companies, the thesis shows that adding materially referenced tip recommendations to the tip solicitation page, as opposed to the more common practice of using traditional number-only tip recommendations, can enhance the competitiveness of the company by increasing the tips that servers can receive. Since tipping will influence employee turnover rates (Lavoie et al. 2021; Lynn and Sturman 2010; Lynn, Kwortnik, and Sturman 2011), material references can aid platforms and companies in recruiting and retaining competent servers and proficient freelancers, thereby increasing the overall service quality. Previous research has emphasized the importance of these factors in delivering stable, excellent services and maintaining high profitability (Fitzsimmons and Maurer 1991; Lynn 2018; Wang, Baker, Kim, and Ma 2021). However, companies and platforms should also give careful consideration to the potential monetary cost and the possibility of customer dissatisfaction when planning the introduction of tip recommendations, as the prevalence of tip recommendations in service scenarios in which customers used to not tip at all has come under assault in recent years (Bluvstein and Raghubir 2021; Morales 2022; Xie 2014).

From the societal perspective, materially referenced tip recommendations can significantly improve the economic well-being of individuals pursuing a job in the service industry and motivate them to work more efficiently, which can in turn boost economic productivity and narrow the income gap caused by the soaring level of economic polarization (Hsieh and Wu 2007; Romei 2020). After all, the workers who heavily rely on tips as a primary income source are often among the most

disadvantaged (Ferdman 2016). For example, according to the Federal Reserve's report, nearly 60% of full-time gig workers faced difficulties covering a US$400 emergency bill (Campbell 2019). This issue is particularly critical given the magnitude and rapid growth rate of service-related industries in which tipping is less frequent, such as the gig economy (Bracha and Burke 2021; Chandar et al. 2019; Duhaime and Woessner 2019; Lynn 2018). However, it is essential to recognize that an increase in tip size generally comes at the expense of customers. Recently, there have been intensified debates surrounding the appropriateness of nudging customers to tip and the amount to tip, especially in the food and dining industry. Meanwhile, a growing number of customers have expressed frustration over companies' or service staff's tip requests in situations where tipping was not customary in the past (Lynn 2017; Morales 2022). Therefore, consumers should also be more cautious about companies or individual servers who are soliciting tips with materially referenced tip recommendations and think twice before tipping, as materially referenced tip recommendations might cause customers to tip when it is unnecessary (Xie 2014).

Lastly, the current research also highlights several aspects to which managers should pay attention, even though adding material references to tip recommendations is generally effective in boosting tipping. For instance, it is important to avoid elements and design that could impair cognitive resources, such as including too much redundant information on the tip solicitation page (Malhotra 1984). In a similar vein, managers also need to be cautious about nudging customers with materially referenced tip recommendations under circumstances in which people tend to be cognitively busy, such as during times when consumers are talking with their friends and are not very attentive to the payment interface in the offline context. Furthermore, companies must have transparent policies regarding how the solicited tips will be

allocated and should actively communicate with the public that the solicited tips will be appropriately transferred to servers. The reason is that the current findings suggest that any distrust in this regard could significantly reduce the effectiveness of materially referenced tip recommendations, particularly when other companies' tipping-related transgressions have been publicized in the media. In addition, marketers should also avoid using referenced products that are less relevant to the focal service context, like referencing flowers or toys, in designing tip recommendations for the delivery person, as the effectiveness of such materially referenced tip recommendations will be impaired.

4.4. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

While this research has provided valuable insights, it comes with several limitations that open avenues for future study. First, the focus of this work is exclusively on dollar-framing tip recommendations. Since the thesis aims to investigate whether materially referenced tip recommendations can outperform number-only tip recommendations, I focused on dollar-framing tip recommendations rather than percentage-framing ones. This decision was based on findings that dollar-framing is at least as effective as, if not more than, percentage-framing in certain contexts (e.g., Alexander, Boone, and Lynn 2021; Barkan and Israeli 2004; Bluvstein and Raghubir 2021). More importantly, given that the actual suggested tip amount of percentage-framing tip recommendations depends on the bill size, from a practical perspective, it might be unrealistic for businesses to pre-determine the material references for the suggested tip amount. Nevertheless, future research can still explore whether the observed effect of materially referenced tip recommendations will be

extended to the context of percentage-framing tip recommendations. In addition, the suggested tip amounts in the current study were moderately low in terms of their monetary value. Although previous research has either suggested or empirically demonstrated that when the recommended tip amount is exceptionally high, customers generally tend to opt out of tipping, whereas when the suggested tip amount is exceptionally low, customers tend to always tip (e.g., Alexander, Boone, and Lynn 2021), testing the observed effect with extremely high or low suggested tip amounts (e.g., US$0.1 vs. US$100) can still provide valuable insights.

Moreover, in this thesis, I only focused on the online tipping scenarios, in which customers had limited contact and interaction with the service employee. Therefore, one may argue that the frequency of tipping under these scenarios is generally low (e.g., Chandar et al. 2019; Lynn 2018). However, a recent survey has highlighted that the frequency of tipping food delivery persons (including both groceries and meal delivery services) ranks as the second most common tipping scenario among US customers, just behind tipping in sit-down restaurants (Ermey 2023). Given that I conducted three experiments (Study 1) that centered around customers' tipping behavior in food delivery scenarios, this thesis has already demonstrated that materially referenced tip recommendations can produce a positive effect even when patrons' tipping frequency is relatively high. Still, future research can examine whether the effect persists in the offline service context, such as in sit-down restaurants, coffeehouses, and barbershops.

Furthermore, while the current findings demonstrated that both hedonic and utilitarian material references work well in the tipping context, I hope that the current research will stimulate greater effort toward the establishment of a comprehensive framework for understanding different types of material references and their distinct

influences on customers' tipping behavior. For instance, Lynn (2015) found that some customers were motivated to tip because they wanted to reward high-quality services. In that case, future research could categorize referenced products into "rewards" versus "non-rewards" and better identify the divergent effect of these two types of referenced goods. Besides, in the current work, I exclusively used material products as stimuli. However, according to the definition of material reference, the referenced product can also be experiential, as long as it is relevant to the service context. Hence, future research can also examine the observed effect using experiential products. Finally, the studies in the current work focused on the complete referenced goods that financially equal the suggested tip amount. In some situations, the material reference can be "partial," such that the referred product is costly and the suggested tip amount can only buy part of the product (e.g., recommending US$7.5 for half a serving of BBQ ribs). Thus, future research can test whether the observed effect holds when the materially referenced tip recommendations Involve these "partial" material references.

Additionally, future research can dig deeper into the observed mechanism by further ruling out alternative explanations and identifying other theoretically relevant boundary conditions. For instance, one may argue that referenced products can justify the use of a particular suggested tip amount (e.g., why suggesting $4 in Study 1A rather than $2 or $5). As for other possible moderators, it has been demonstrated that factors such as chronic vividness of imagery (Pham, Meyvis, and Zhou 2001) and temporal distance from events (Yan, Sengupta, and Hong 2016) can exert an influence on the vividness of mental imagery, whereas the feeling of autonomy (Meng et al. 2020) and required effort (Olivola and Shafir 2013) have been proven to impact the perceived meaningfulness of specific behavior. Since the observed effect in the current research is sequentially driven by vivid outcome simulation and the perceived

meaningfulness of tipping, it is likely that the aforementioned variables could also moderate the observed effect. Considering the fact that the current research focuses on conditions either in which customers have not received services yet (Studies 1A, 1C), or in which customers were satisfied with the services received (Studies 1B, 2A, 2B, 2C, 3, 4, 5), another avenue for future research is to explore the impact of customers' level of satisfaction toward the services they received on the observed effect. Specifically, when customers experience a service failure, it is possible that they will develop resentment toward the service employee, which can eventually lead to retaliation behavior (Grégoire, Tripp, and Legoux 2009; Yadav and Chakrabarti 2022; Zhang, Zhang, and Sakulsinlapakorn 2020). Given that revenge-related behavior often involves avoiding helping the target and letting the target suffer (Bocian and Myslinska Szarek 2021; Lichtenberg 2001; Orth, Montada, and Maercker 2006; Vaish, Carpenter, and Tomasello 2010), I propose that materially referenced (vs. non materially referenced) tip recommendations might significantly decrease customers' tipping intention and tip size once they feel unsatisfied with the services, as customers might want to avoid benefiting the servers who made them frustrated.

Last but not least, future research can also explore the impact of materially referenced tip recommendations on other customer-related consequences in the service settings, such as how materially referenced tip recommendations influence customers' satisfaction rate, their re-purchase intention, and their future spending. Since previous literature in the tipping domain has explored the effect of number-only tip recommendations on these variables (Alexander, Boone, and Lynn 2021), it would be helpful to further understand whether incorporating material references in tip recommendations can lead to more positive consumer reactions in terms of customer satisfaction, re-patronage likelihood, and future spending.

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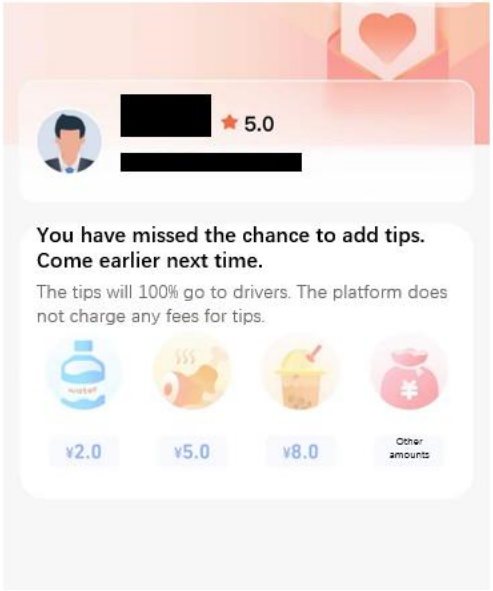
APPENDIX

APPENDIX A:

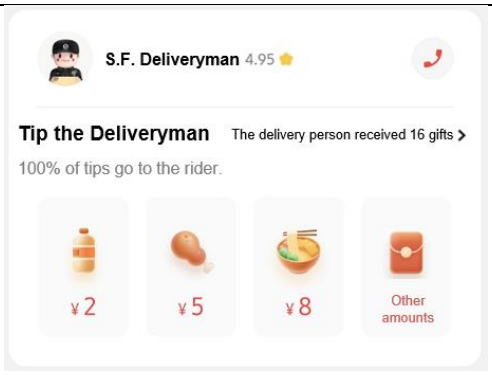
FIGURES AND STIMULI IN CHINESE AND TRANSLATION

A1. FIGURE 1

A1.1. Amap Ride-Hailing

	
Original page in Chinese	Translated version

A1.2. SF EXPRESS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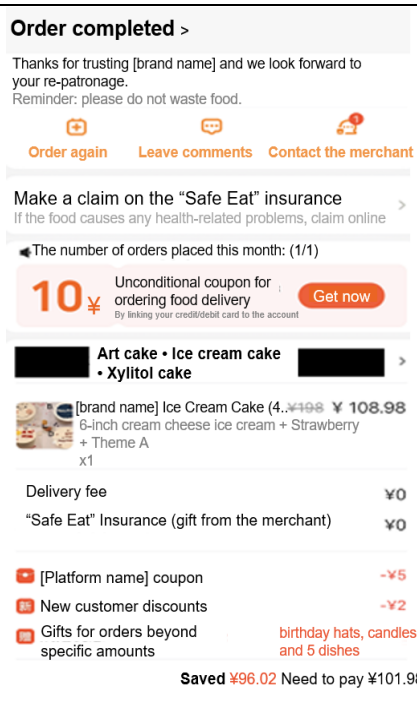
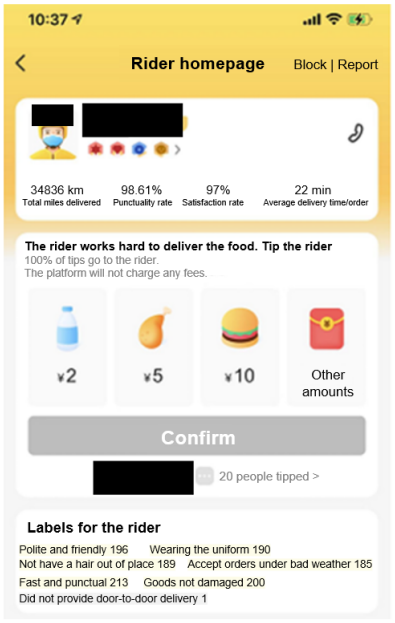
A2. STIMULI FOR STUDY 1B

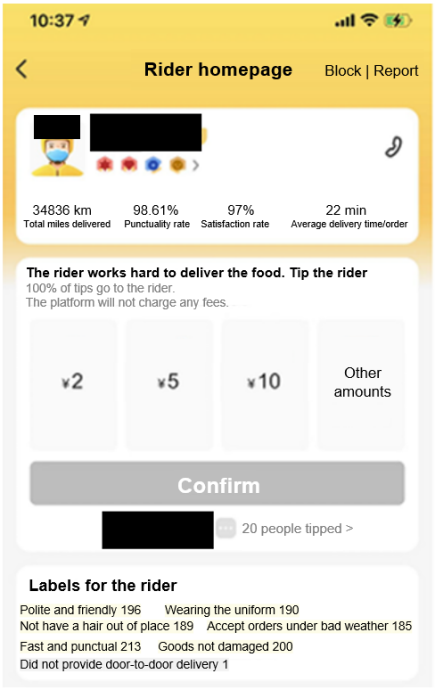
A2.1. Introduction Page

	
Original page in Chinese	Translated version

A2.2. Tip Recommendation Page of Material-Reference Condition

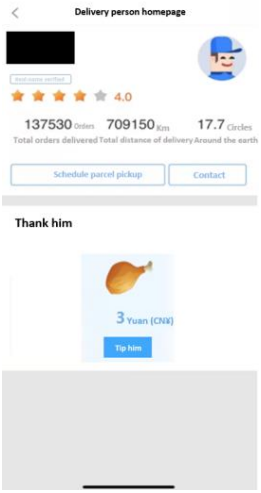
	
Original page in Chinese	Translated version

A2.3. Tip Recommendation Page of Control Condition

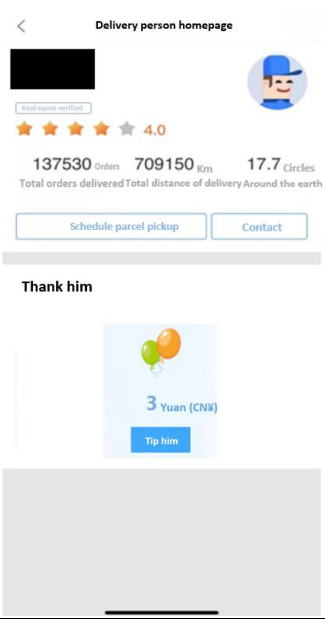
	
Original page in Chinese	Translated version

A3. STIMULI FOR STUDY 5

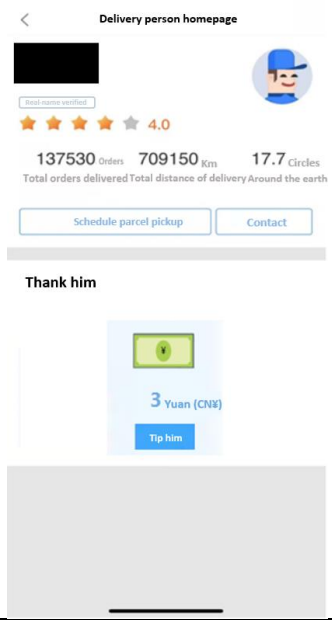
A3.1. High-Relevance-Reference Condition

	
Original page in Chinese	Translated version

A3.2. Low-Relevance-Reference Condition

	
Original page in Chinese	Translated version

A3.3. Control Condition

	
Original page in Chinese	Translated version

APPENDIX B:

SUMMARY OF FINDINGS

B1. SUMMARY TABLE

TABLE 1

SUMMARY OF FINDINGS

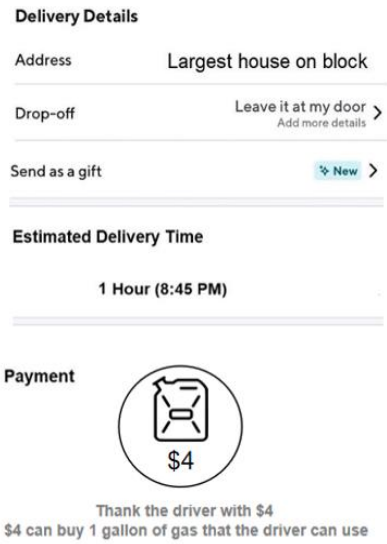
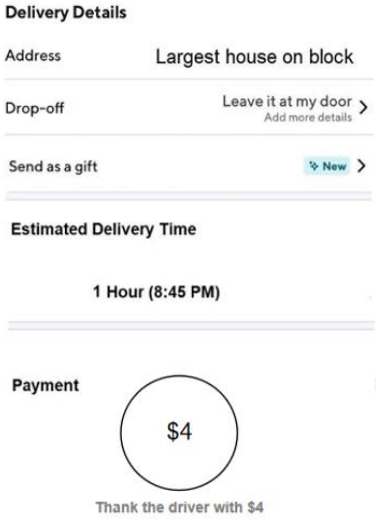
Study	Main Purposes	Context	Findings
Study 1A (MTurk)	Showing the basic effect that incorporating material references into tip recommendations increases tipping	Food delivery services	Participants were more likely to tip when the tip recommendation was materially referenced.
Study 1B (Chinese online research panel)			Participants were more likely to tip and gave more tips when the tip recommendation was materially referenced.
Study 1C (MTurk)	Generalizing the basic effect to the context with verbally presented material references	Ride-sharing services	Participants were more likely to tip even when the material reference was presented in text format.
Study 2A (MTurk)	Examining the serial mediation role of outcome simulation vividness and perceived meaningfulness while ruling out alternative accounts including self-attribution, psychological distance, and perceived communality of customer–server relationship		The positive effect of materially referenced tip recommendations on tipping was sequentially mediated by more vivid outcome simulation and higher perceived meaningfulness of tipping, and was not driven by the aforementioned alternative accounts.
Study 2B (MTurk)	Ruling out the alternative accounts including perceived novelty, discrepancy between the perceived financial value of referenced goods and the suggested tip amount, level of	Freelancing services	The positive effect of materially referenced tip recommendations on tipping was not driven by the aforementioned alternative accounts.

	engagement, and felt affect		
Study 2C (MTurk)	Ruling out the alternative account—the level of pain of payment	Ride-sharing services	The positive effect of materially referenced tip recommendations on tipping persisted even when customers did not need to pay for the fare (i.e., having a low level of pain of payment).
Study 3 (MTurk)	Examining the moderating role of cognitive load	Freelancing services	The positive effect of materially referenced tip recommendations on tipping attenuated when customers were experiencing a high level of cognitive load.
Study 4 (MTurk)	Examining the moderating role of suspicion of tip theft	Courier services	The positive effect of materially referenced tip recommendations on tipping attenuated when customers suspected that tips might not fully go to the servers.
Study 5 (Credamo)	Examining the moderating role of the relevance of the referenced product to the service context		The positive effect of materially referenced tip recommendations on tipping attenuated when the referenced product was less relevant to the service context.

APPENDIX C:

SUPPLEMENTARY MATERIAL FOR STUDY 1A

C1. STUDY STIMULI

	
Material-reference condition	Control condition

C2. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest seeks to ensure that participants can recognize the exemplification nature of material references. In other words, the study aims to confirm that participants do perceive the referenced products as exemplars of how the tip *can* be used rather than how the tip *will* actually be used.

I recruited 50 participants from Amazon Mechanical Turk (MTurk) for a nominal payment, using the same subject pool as in Study 1A. Participants underwent

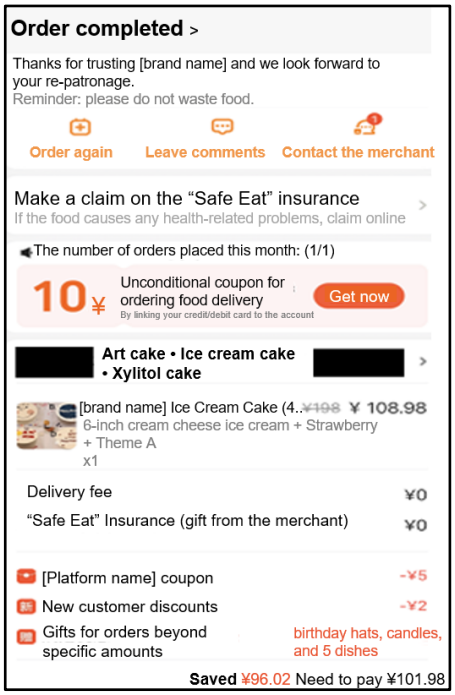
the same procedure and viewed the same stimuli as those in the material-reference condition of Study 1A. Next, they were asked to indicate the nature of the material reference on a binary-choice question ("Do you think the one gallon gas in the above picture is an example to show what the $4 tip can buy?"; 1 = "yes, it is an example to show what the $4 tip can buy," 0 = "no").

Consistent with expectations, 46 (92.0%) participants successfully recognized the exemplification nature of the referenced product.

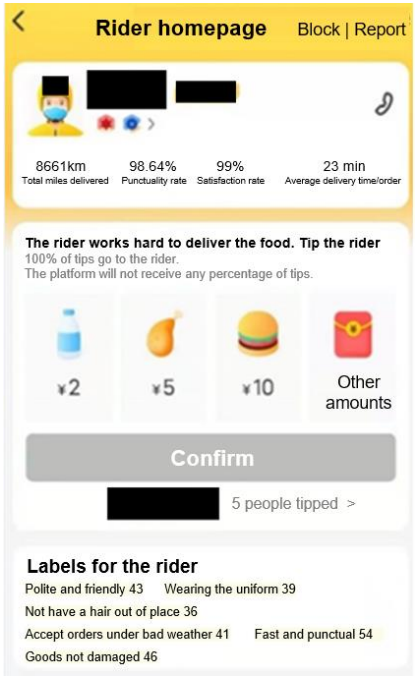
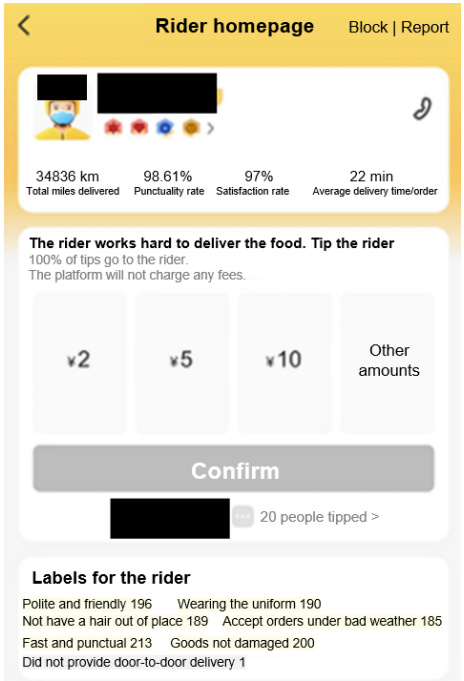
APPENDIX D:

SUPPLEMENTARY MATERIAL FOR STUDY 1B

D1. INTRODUCTION PAGE STIMULI (IN ENGLISH)



D2. STIMULI FOR MANIPULATING MATERIALLY REFERENCED TIP RECOMMENDATIONS (IN ENGLISH)

	
Material-reference condition	Control condition

D3. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest serves the same purpose as the pretest of Study 1A (see Appendix C2).

I recruited 50 participants from a Chinese online research panel for a nominal payment, using the same subject pool as in Study 1B. Participants underwent the same procedure and viewed the same stimuli as those in the material-reference condition of Study 1B. Next, they were asked to indicate the nature of the material references on three binary-choice questions ("Do you think the bottled water/fried chicken/hamburger in the above picture is an example to show what the ¥2/¥5/¥10 tip

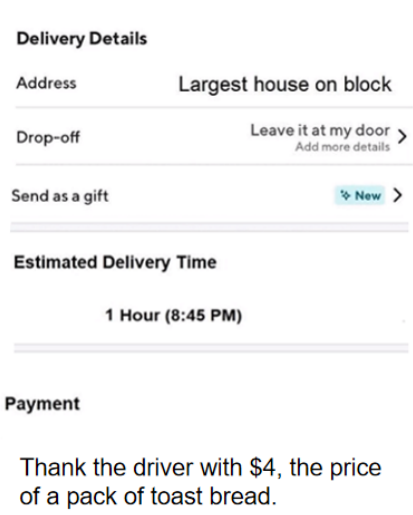
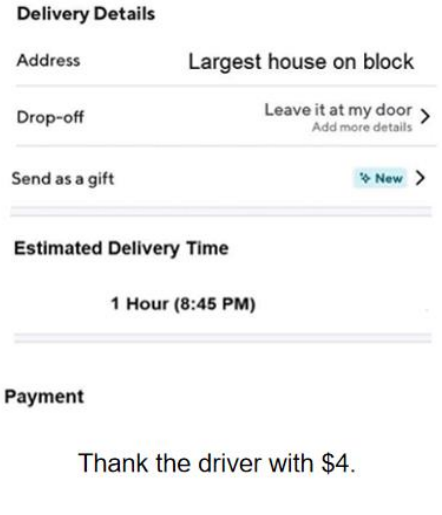
can buy?"; 1 = "yes, it is an example to show what the ¥2/¥5/¥10 tip can buy," 0 = "no").

As expected, for the question regarding bottled water and fried chicken, all 50 (100.0%) participants successfully recognized the exemplification nature of the referenced products. For the questions regarding the hamburger, 49 (98.0%) participants successfully recognized the exemplification nature of the referenced product. Therefore, on average, 98.7% of participants could successfully recognize the exemplification nature of the referenced products.

APPENDIX E:

SUPPLEMENTARY MATERIAL FOR STUDY 1C

E1. STUDY STIMULI

	
Material-reference condition	Control condition

E2. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest serves the same purpose as the pretest of Study 1A (see Appendix C2).

I recruited 50 participants from Amazon Mechanical Turk (MTurk) for a nominal payment, using the same subject pool as in Study 1C. Participants underwent the same procedure and viewed the same stimuli as those in the material-reference condition of Study 1C. Next, they were asked to indicate the nature of the material reference on a binary-choice question (“Do you think the price of a pack of toast

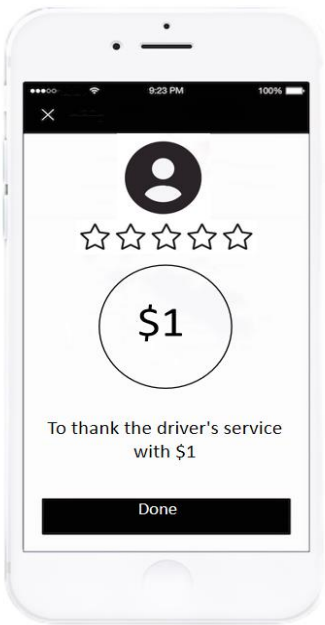
bread in the above picture is an example to show what the $4 tip can buy?"; 1 = "yes, it is an example to show what the $4 tip can buy," 0 = "no").

As expected, 45 (90.0%) participants successfully recognized the exemplification nature of the referenced products.

APPENDIX F:

SUPPLEMENTARY MATERIAL FOR STUDY 2A

F1. STUDY STIMULI

	
Material-reference condition	Control condition

F2. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest serves the same purpose as the pretest of Study 1A (see Appendix C2).

I recruited 52 participants from Amazon Mechanical Turk (MTurk) for a nominal payment, using the same subject pool as in Study 2A. Participants underwent the same procedure and viewed the same stimuli as those in the material-reference condition of Study 2A. Next, they were asked to indicate the nature of the material

reference on a binary-choice question ("Do you think the bottled water in the above picture is an example to show what the $1 tip can buy?" 1 = "yes, it is an example to show what the $1 tip can buy," 0 = "no").

Consistent with expectations, all 52 (100.0%) participants successfully recognized the exemplification nature of the referenced product.

F3. FULL SCALES FOR SELF-ATTRIBUTION AND PERCEIVED COMMUNALITY OF CUSTOMER-SERVER RELATIONSHIP

F3.1. Scale of Self-Attribution

If you choose to not tip the driver, to what extent do you agree with the following statements?

I am a good person.

I am compassionate.

I am sympathetic.

I am helpful.

(1 = Strongly disagree, 9 = Strongly agree)

F3.2. Scale of Perceived Communality

To what extent do you think the driver is like…

a close friend?

a family member?

a person with whom I would have a personal relationship with outside of business?

a person with whom I would want to interact with outside of business?

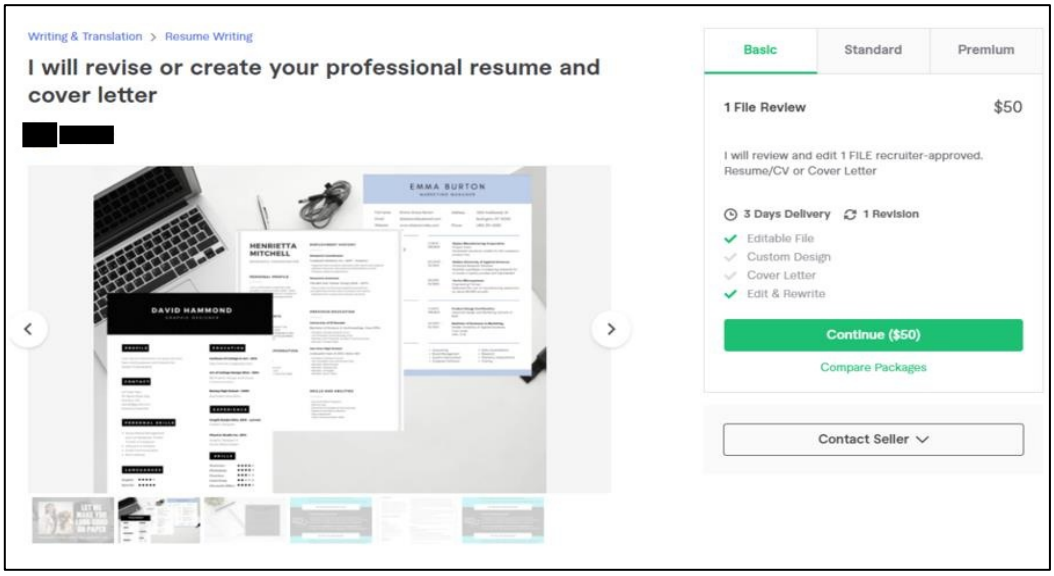
a person whom I would genuinely care about?

(1 = Not at all, 9 = Very much)

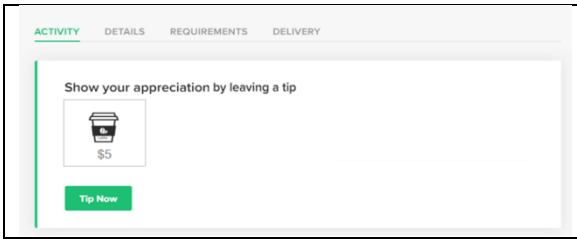
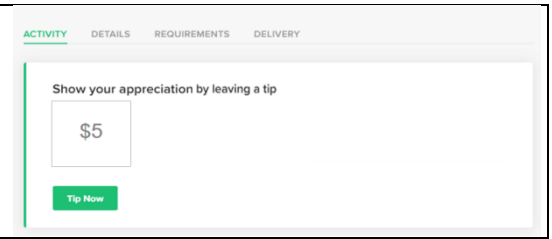
APPENDIX G:

SUPPLEMENTARY MATERIAL FOR STUDY 2B

G1. INTRODUCTION PAGE STIMULI



G2. STIMULI FOR MANIPULATING MATERIALLY REFERENCED TIP RECOMMENDATIONS

	
Material-reference condition	Control condition

G3. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest serves the same purpose as the pretest of Study 1A (see Appendix C2).

I recruited 52 participants from Amazon Mechanical Turk (MTurk) for a nominal payment, using the same subject pool as in Study 2B. Participants underwent the same procedure and viewed the same stimuli as those in the material-reference condition of Study 2B. Next, they were asked to indicate the nature of the material reference on a binary-choice question ("Do you think the cup of coffee in the above picture is an example to show what the $5 tip can buy?"; 1 = "yes, it is an example to show what the $5 tip can buy," 0 = "no").

As expected, 50 (96.2%) participants successfully recognized the exemplification nature of the referenced product.

G4. FULL SCALES FOR PERCEIVED NOVELTY, PERCEIVED VALUE FOR MONEY, LEVEL OF ENGAGEMENT, AND POSITIVE AND NEGATIVE AFFECT SCHEDULE

G4.1. Scale of Perceived Novelty

How do you feel about tipping through this tip solicitation page?

It satisfies my sense of curiosity.

I feel like I'm exploring new worlds.

It offers novel experiences.

It satisfies my sense of curiosity.

(1 = Not agree at all, 9 = Fully agree)

G4.2. Scale of Perceived Value for Money

To what extent do you think that a cup of coffee sold at the price of $5.....

is reasonably priced.

is a good product for the price.

would be economical.

offers value for money.

(1 = Not at all, 9 = Very much)

G4.3. Scale of Level of Engagement

The tip solicitation experience was engaging.

The tip solicitation experience was fun.

The tip solicitation experience left me in a positive mood.

The tip solicitation experience was effortful.

(1 = Not at all, 9 = Very much so)

G4.4. Scale of Positive and Negative Affect Schedule

Please indicate to what extent the following words can capture your current affective state.

Interested/irritable/distressed/alter/excited/ashamed/upset/inspired/strong/nervous/guilty/determined/scared/attentive/hostile/jittery/enthusiastic/active/proud/afraid

(1 = Very slightly, 9 = Extremely)

APPENDIX H:

SUPPLEMENTARY MATERIAL FOR STUDY 3

H1. ANALYSIS WITH USAGE FREQUENCY AS COVARIATE

When usage frequency was included as the covariate, a two-way ANOVA yielded a significant main effect of cognitive load ($F(1, 395) = 9.23$, $p = .003$). However, the main effect of material reference was not significant ($p = .101$). In addition, the significant interaction between these two variables persisted ($F(1, 395) = 4.24$, $p = .040$).

APPENDIX I:

SUPPLEMENTARY MATERIAL FOR STUDY 4

I1. STIMULI FOR MANIPULATING SUSPICION OF TIP THEFT

USNews NEWS » News Best Countries Best States Healthiest Communities Opinion Elections The Racial Divide Photos U.S. News Live The Report

Homepage / News / Health News /

Your Tips Might Not 100% Go to Servers

By Cecelia Smith-Schoenwalder | Dec. 23, 2022, at 1:20 p.m.

Save

Although tipping is becoming more and more prevalent, do you know that some companies are "stealing" your tips from service providers?

According to a recent survey by the America National Labor Organization (ANLO), approximately 20% of service providers who have received tips have encountered "tip stealing" at least once. The two most common types of "tip stealing" are (1) "tip pooling," which means that companies force their employees to share the tips they received with their supervisors, and (2) "direct stealing," which stands for the practice of forcing employees to give part of their tips to the company and use the collected tips to cover base pay and operational costs.

A spokesman from the ANLO said: "This is unacceptable. Companies must ensure that the service providers are given all the tips they received. We urge companies to take actions to ensure that employees are fairly compensated. We will also help those exploited employees fight against those greedy companies."

Suspicion of tip theft condition

USNews NEWS » News Best Countries Best States Healthiest Communities Opinion Elections The Racial Divide Photos U.S. News Live The Report

Homepage / News / Health News /

Store Owner Speaks Out on Rising Shoplifting Incidents

By Cecelia Smith-Schoenwalder | Dec. 23, 2022, at 1:20 p.m.

Save

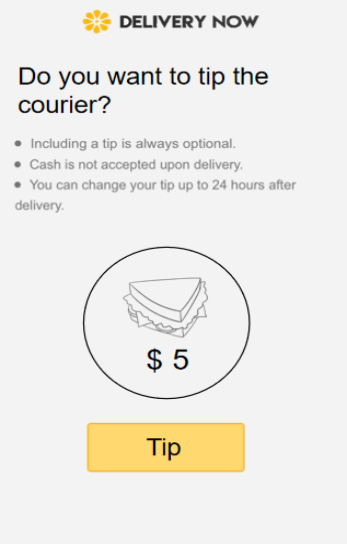
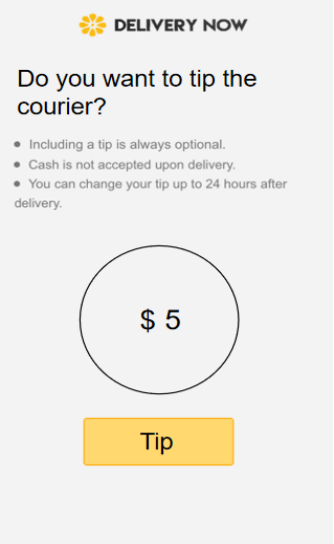
Shoplifting has become a growing concern for businesses recently. Small business owners have been hit hard by the increase in thefts, leading to lost revenue and increased security costs.

One store owner, who wishes to remain anonymous, spoke out about the issue and called for action to be taken. The store owner reported that their store has experienced a significant increase in shoplifting incidents in the past few months, possibly due to the economic impacts of the COVID-19 pandemic. They estimate that they have lost several thousand dollars in merchandise, with the most commonly stolen items being cosmetics, clothing, and small electronics. Store owners also noted that the thefts have become brazen; some of them even attempting to steal entire racks of merchandise.

The store owners are calling on authorities to take action to address the issue. They suggest increased police patrols, improved security measures, and harsher penalties for those caught stealing. They also urge fellow business owners to be vigilant and take steps to protect their stores and merchandise.

Control condition

I2. STIMULI FOR MANIPULATING MATERIALLY REFERENCED TIP RECOMMENDATIONS

	
Material-reference condition	Control condition

I3. PRETEST FOR SUSPICION OF TIP THEFT

This pretest aims to validate the effectiveness of manipulating suspicion of tip theft. Specifically, I posit that after having read a news report regarding the tip theft misconduct by one company, consumers will suspect that other companies might also not distribute all solicited tips to the intended recipient. This is due to consumers' tendency to overgeneralize deviant behavior across similar companies (Goldstein, Cialdini, and Griskevicius 2008; Jonsson, Greve, and Fujiwara-Greve 2009).

I recruited 102 participants from MTurk for a nominal payment, using the same subject pool as in Study 4. Participants were randomly assigned to conditions of a two-cell (suspicions of tip theft vs. control) between-subjects design experiment. They read the same news reports as in Study 4. Next, they were asked to indicate to what extent they suspect that other companies would misappropriate the solicited tips

on a single-item, nine-point scale (1 = “not at all,” 9 = “very much”).

An independent samples t-test revealed that participants exposed to the news report about tip theft indicated a higher level of suspicion ($M = 5.90$, $SD = 2.07$) compared to those who read the shoplifting news report ($M = 3.94$, $SD = 2.65$; $t(100) = 4.16$, $p < .001$).

I4. PRETEST FOR EXEMPLIFICATION NATURE OF REFERENCED GOODS

This pretest serves the same purpose as the pretest of Study 1A (see Appendix C2).

I recruited 46 participants from Amazon Mechanical Turk (MTurk) for a nominal payment, using the same subject pool as in Study 4. Participants underwent the same procedure as the second task in Study 4 (i.e., without the manipulation of suspicion of tip theft) and viewed the same stimuli as those in the material-reference condition of Study 4. Next, they were asked to indicate the nature of the material reference on a binary-choice question (“Do you think the sandwich in the above picture is an example to show what the $5 tip can buy?”; 1 = “yes, it is an example to show what the $5 tip can buy,” 0 = “no”).

As expected, 42 (91.3%) participants successfully recognized the exemplification nature of the referenced product.

I5. ANALYSIS WITH DIFFICULTY OF COMPREHENSION AS COVARIATE

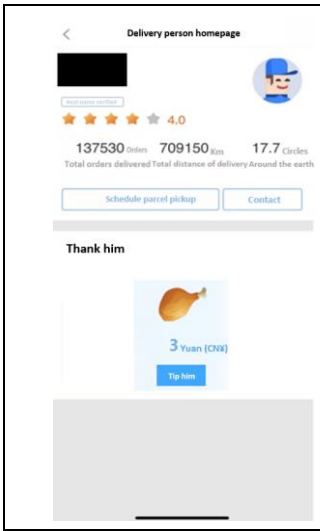
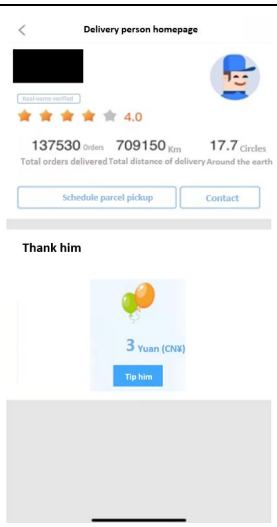
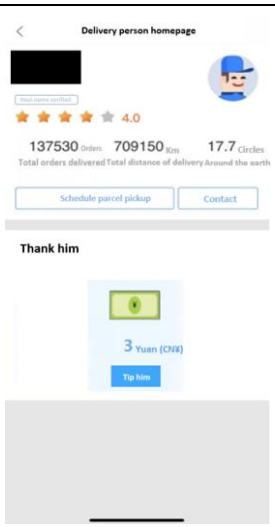
When perceived difficulty of comprehension was included as the covariate, a

two-way ANOVA yielded a significant main effect of material reference ($F(1, 393) = 3.94$, $p = .048$). However, the main effect of the news report topic was not significant ($p = .213$). In addition, the significant interaction between these two variables persisted ($F(1, 393) = 5.26$, $p = .022$).

APPENDIX J:

SUPPLEMENTARY MATERIAL FOR STUDY 5

J1. STIMULI

		
High-relevance-reference condition	Low-relevance-reference condition	Control condition