

The Effects of Injunctive and Descriptive Tipping Norms  
on Tipping Behavior and Motives

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## ABSTRACT

Although tipping is widely considered to be normative behavior, normative influences on tipping have been under studied. A hypothetical scenario experiment examined the effects on tipping of both descriptive and injunctive tipping norms as well as their interactions with one another and with tipping motives. Results support the normative nature of tipping -- stronger injunctive tipping norms increased both the likelihood of tipping counterworkers and (at least sometimes) the size of tips given to them. However, local descriptive tipping norms had small if any main-effects on the tipping of counterworkers, probably because they decreased respondents' perceptions that the worker deserved more tips, that their tips would be noticed, and that their tips would encourage others to tip at the same time that they increased respondents' feelings of being pressured to tip. These and other findings in this study demonstrate the complex nature of normative influences on tipping as well as the need for more research on those influences.

# The Effects of Injunctive and Descriptive Tipping Norms on Tipping Behavior and Motives

## 1. Introduction

Many service workers depend on voluntary gifts of money (called “tips” in the U.S.) from their customers for a substantial portion of their incomes. In the hospitality industry alone, those workers receiving tips from customers include airport porters, baristas, bartenders, bellmen, busboys, concierges, courtesy van drivers, croupiers, doormen, golf caddies, hotel maids, parking valets, restaurant musicians, sommeliers, taxicab drivers, tour-guides, and waiters, among others (Lynn, 2016a, 2019). Broader data is not available, but in U.S. restaurants, these payments represent up to 62 percent of the workers’ incomes (Payscale, 2015). Furthermore, estimates place the total amounts tipped to foodservice workers in the U.S. at over \$45 billion a year (Azar, 2011).

As a voluntary consumer expense and a source of worker income, tipping is of both theoretical and practical interest. Accordingly, it has been the subject of a substantial and growing body of interdisciplinary academic research – see Lynn (2006, 2015, 2017) and Azar (2007, 2020) for reviews. One stream of this research has tested the roles of injunctive and descriptive norms on tipping and on the motivations for tipping. For example, researchers have found that tipping adheres strongly to normative prescriptions (Lynn and McCall, 1999; Lynn, Jabbour and Kim, 2012) and perceptions of tipping norms partially mediate race differences in tipping (Lynn, 2011; Lynn and Brewster, 2015). A second stream of tipping research has tested various techniques for increasing tip income (see Lynn, 2011, 2018b). For example, researchers have found that service workers earn larger tips when they call their customers by name (Seiter,

Givens, and Wegner, 2016), compliment their customers (Seiter and Wegner, 2010), box their customers' leftovers (Seiter and Wegner, 2018), and give their customers mementos (Frank, 2020).

The current paper contributes to both of these streams of research by using a hypothetical scenario experiment to examine the effects of store-type (coffee-shop vs convenience-store) and tip jar fullness (empty vs half-full vs full) along with their interactions with one another and with individual differences in tipping motives on the tipping of a counter-worker delivering a coffee and pastry. Since tipping is more normative in U.S. coffee-shops than in U.S. convenience-stores, the manipulation of store-type is a reasonable (if imperfect) manipulation of societal injunctive tipping norms. In addition, since tip jar fullness is the result of local consumers' tipping behavior, the manipulation of tip jar fullness (together with observation of contributions to it) is a clear manipulation of local descriptive tipping norms. Thus, the main and moderation effects of these manipulations should shed light on the roles that injunctive and descriptive tipping norms play in tipping behavior. Furthermore, the effects of tip jar fullness speak to the efficacy of salting tip jars - a commonly advocated technique for increasing tips.

## **2. Literature Review**

Injunctive norms are socially enforced rules of conduct; they specify how some social group thinks you should behave. They influence behavior because compliance is socially rewarded and non-compliance is socially sanctioned (Vesely and Klockner, 2018) and/or because they have been internalized (Bertoldo and Castro, 2016). Descriptive norms are popular forms of conduct; they describe how most members of some social group do or do not behave (Bergquist and Nilsson, 2019). They influence behavior by providing information about the behavior's probable net benefits – i.e., by (i) conveying information about consensus opinion regarding

consequences of the behavior (Carcioppolo, Dunleavy and Yang, 2017), (ii) identifying behavioral ways of being similar to or different from others (Christensen, et.al., 2004), (iii) providing clues about the existence and nature of injunctive norms (Eriksson, Strimling and Coultas, 2015), (iv) affecting the perceived likelihood or impact of social rewards/sanctions following the behavior (Welch, et.al., 2005), and/or (v) altering perceptions of personal efficacy, or responsibility, for the attainment of public goods the behavior is targeted at achieving (Gugenishvili, Francu and Koporcic, 2021; Habib, White and Hoegg, 2021). Although injunctive and descriptive norms are typically highly correlated, researchers have found that they each have unique effects on behavior (Buunk and Bakker, 1995) and often moderate one-another's behavioral effects (Smith, et. al, 2012).

Like other social behaviors, tipping is guided by injunctive and descriptive norms. Injunctive tipping norms (ITN) are frequently described in tipping- and etiquette-guides, which specify who should be tipped and (often) a range of appropriate tip amounts as well. For example, Fodor's (2002) "How to Tip" informs readers that they should tip waiters/waitresses 15 to 20 percent of the bill, parking valets 1 to 5 dollars, baristas 25 to 50 cents, and hotel maids 1 to 3 dollars a night. Descriptive tipping norms (DTN) are frequently described in online and press articles (e.g., Michaels and Kiersz, 2018) and can be inferred from the fullness of tip jars as well as observed directly in many cases.

Researchers have found that consumers generally conform with injunctive norms about who should be tipped (Lynn, 2011) and how much (Lynn and McCall, 1999). They have also found that perceptions of injunctive and descriptive tipping norms each account for unique variance in race differences in tipping (Lynn and Brewster, 2015). Finally, researchers have found that occupational differences in tipping norms, but not national differences in tipping

norms, moderate the effects of individual differences in tipping motives (Lynn, 2016b, 2018a; Lynn and Brewster, 2020). However, existing research on tipping norms has just scratched the surface; there is still much to be learned about when and how these norms influence tipping behavior. In particular, it is not clear (i) whether tipping norms have similar or different effects on the likelihood of tipping and on the size of non-zero tips left, (ii) whether stronger descriptive tipping norms have positive, negative, or non-linear effects on tipping, (iii) if and how descriptive tipping norms moderate the effects of injunctive tipping norms, and (iv) how valid and generalizable the effects of occupational tipping norms on tipping motives are. Each of these areas of uncertainty are described further below.

### *2.1 Different norm effects on tipping likelihood and tip size*

Researchers have found that the determinants/predictors of tipping often differ across the internal and external margins. For example:

- Haggag and Pace (2014) found that larger default tips decreased the likelihood of tipping but increased the size of those tips left,
- Schwer and Daneshvary (2000) found that price (or bill size) was unrelated to the likelihood of tipping a hair-stylist but increased the size of those tips given.
- Lynn (2015b) found that duty motives increased the likelihood of tipping but decreased the size of those tips left across a variety of services.

These results suggest that consumers often make two different tipping decisions – whether to tip or not and (conditioned on tipping) how much to tip.

Unfortunately, existing theory and research is unclear if or how these two decisions are differentially affected by increasing injunctive and/or descriptive tipping norms. Descriptive

tipping norms describe how many people tip and/or how much the average person tips.

Intuitively, it seems likely that increasing the latter type of DTN would affect tipping likelihood more than tip size, and vice-versa for the former type of DTN, but this is far from a certainty (see Section 2.2 below). Injunctive norms prescribe both whom and how much to tip. However, tipping likelihood is measured across norm compliant and non-compliant people alike while non-zero tip sizes are measured only from people already complying with at least a portion of the norm. This selection effect suggests that increasing ITNs may affect tipping likelihood less than non-zero tip sizes. On the other hand, injunctive prescriptions about tip size are typically ranges rather than precise amounts (see comments Section 2.0) and this ambiguity may mean that increasing ITNs affect tipping likelihood more than tip size. All of these possibilities are examined for the first time in the study described below.

## *2.2. Direction and shape of descriptive-norm effects*

Paralleling descriptive norm effects in other contexts, DTNs should impact tipping through the information they convey about (i) consensus perceptions of servers' need and deservingness of tips, (ii) the likelihood or impact of social rewards/sanctions for tipping/stiffing, and/or (iii) the degree of one's personal responsibility for fairly compensating and helping servers. However, these processes are complex and could lead to positive, negative or non-linear effects of increasing DTNs on tipping likelihood and tip size. Among many possibilities are the following:

- Larger numbers of tippers and/or larger amounts tipped may communicate a stronger public consensus that servers need and deserve tips, which would increase tipping.
- Consumers should gain more esteem by tipping when tipping is rare than when it is common but should lose more esteem by not tipping when it is common than when it is rare. To the

extent that people feel losses more intensely than gains (Tversky and Kahneman, 1991), this shift from a promotion to a prevention focus as the number of tippers grows would increase tipping likelihood.

- The amount consumers must tip to gain esteem or avoid loss of esteem increases with the average tip amount (Lynn, 2015a). To the extent that the law of demand applies to social esteem, this increase in the cost of social-esteem as average tip size increases would decrease tip sizes.
- The act of putting money in tip jars and the amount tipped both leave more noticeable traces the less money was previously in the tip jar. Since social rewards and sanctions depend on the visibility of the behavior being rewarded or sanctioned, this suggests that more tippers and fuller tip jars may reduce tipping in this context.
- Increases in the number of people tipping or the average size of tips from low to moderate may help convince people that collective action across tippers is effective in compensating and helping servers and this could increase feelings of personal efficacy and responsibility to contribute, while increases in the number of people tipping or the average size of tips from moderate to high may convince people that servers will be compensated and helped by others without their individual contributions and this could decrease feelings of personal efficacy and responsibility to contribute. In that case, increases in DTNs would have an inverted-U effect on tipping likelihood and tip size.

The varied effects of these different theoretical processes make a-priori prediction impossible and point to the need for research to learn when each process becomes dominant and shapes the effects of increasing DTNs on tipping. The current study contributes to such learning by examining for the first time the potential linear and non-linear effects of three levels of



descriptive tipping norms in counter service contexts on tipping behavior as well as on perceived tip visibility and server deservingness of tips.

### *2.3 Injunctive x descriptive tipping-norm interactions*

The potential effects of increasing DTNs on the perceived likelihood or impact of social rewards/sanctions for tipping/stiffing servers (discussed in Section 2.2) mean that DTNs may moderate the effects of ITNs, because injunctive norms that are socially enforced have stronger effects on behavior than do injunctive norms that are not socially enforced (Nelissen and Mulder, 2013). Likewise, the potential effects of increasing DTNs on perceptions of one's personal responsibility for fairly compensating and helping servers (again discussed in Section 2.2) also mean that DTNs may moderate the effects of ITNs, because feelings of personal responsibility increase compliance with internalized norms (Howie, et. al., 2018; Tyler, Orwin and Schurer, 1982; Schwartz, 1975). Both positive and negative interactions of injunctive and descriptive norms have been found in other contexts (Habib, White and Hoegg, 2021; Smith, et. al, 2012), but the interaction of ITNs and DTNs are examined for the first time in the study below.

### *2.4 Normative moderation of the effects of tipping motives*

Existing research has found that the motives underlying tipping vary with occupational differences in descriptive tipping norms. In particular, Lynn (2016b, 2018a) found that: (i) individual differences in altruistic motives for tipping predict tipping likelihood more strongly for occupations that are occasionally tipped than for rarely or frequently tipped occupations, (ii) individual differences in reciprocity motives predicted tipping likelihood more strongly for occupations that are occasionally or frequently tipped than for rarely tipped occupations, and (iii) individual differences in duty motives for tipping increased tipping likelihood more strongly for

frequently tipped occupations than for rarely or occasionally tipped ones. He explained these findings by speculating that the number of other tippers affects perceptions of servers' financial need, the adequacy of compensation for their efforts, and the legitimacy of their tip expectations and argued that the findings support the use of different types of appeals for tips given different descriptive tipping norms.

Unfortunately, Lynn's (2016b, 2018a) operationalization of descriptive tipping norms with occupational differences in those norms means that the effects are potentially confounded with numerous other occupational differences. Such confounding is made more plausible by research finding that occupational characteristics theorized to affect the strength of tipping motives are related to the occupational likelihood of receiving tips (Azar, 2005; Starbuck, 2009; Lynn, 2016a, 2018b, 2019). Stronger conclusions about causal moderation could be made if other manipulations of descriptive tipping norms could be shown to have similar moderation effects. The study reported below attempts to provide such evidence by examining the effects on tipping of interactions between various tipping motives and two new manipulations of tipping norms – one of descriptive tipping norms reflected in tip jar fullness and the other of injunctive tipping norms operationalized by service context.

In addition, Lynn (2016b, 2018a) examined tipping norms as moderators of tipping motive effects only on tip likelihood. Those interactions may have different effects on tip size, just as tipping motives sometimes have different effects on tipping likelihood and tip size (Lynn, 2015b). A final contribution of the current study is to go beyond Lynn's work to examine tipping-norm x tipping-motive interaction effects on tip size as well as tipping likelihood.

### 3. Method

#### 3.1. *Overview*

An online survey asked Amazon MTurk workers how much they would tip for counter service involving purchase of coffee and a donut under various conditions of a 2 (store-type) X 3 (descriptive tipping-norm) between-subjects design. Store type was either a coffee shop or a convenience store. Descriptive tipping norms were either low (no one observed tipping and empty tip jar), moderate (some people observed tipping and half-full tip jar), or high (many people observed tipping and full tip jar). Respondents also answered various questions about themselves, most notably about their motivations for, and attitudes toward, tipping. The study was run twice – once in October 2020 (during the height of Covid) and again in June 2021 (during a lull in the pandemic) – and the data was merged for analysis.

#### 3.2. *Sample*

In October of 2020, one-thousand, two-hundred and twenty-six Amazon MTurk workers took a short online survey about tipping for coffee service in exchange for a small monetary payment. However, 52 these respondents were dropped from analysis because they did not answer an attention check question correctly and/or rated their intentions to respond seriously, honestly, carefully and accurately an average of less than 3 on the 5-point scale described in the next sub-section.

In June of 2021, one-thousand, four-hundred and seven MTurk workers took a slightly revised version of the survey, but 34 of these respondents were dropped from analysis because they did not answer an attention check question correctly and/or rated their intentions to respond

seriously, honestly, carefully and accurately an average of less than 2 on the 3-point scale described below.

Data from the retained subjects in both the original and replication study were merged for analysis after standardizing the manipulation check, opinion measures, and tipping motive measures within each replication. The combined sample was not representative of the U.S. population, but it was large and diverse. Respondents' ages ranged from 19 to 89 with a mean of 40. Forty-eight percent were female, 9 percent self-identified as Asian, 11 percent as Black, 5 percent as Hispanic, and 73 percent as White. Sixty-four percent had a four-year-college degree or more education. Twenty-seven percent had an annual income less than \$30,000, 39 percent had an annual income between \$30,000 and \$59,999, and 35 percent had an annual income of \$60,000 or more. Several of the 2,547 retained respondents failed to answer one or more questions, so sample sizes vary slightly across the analyses reported below.

### *3.3. Respondent Quality Check*

First, respondents were asked questions designed to assess the quality of their data. Specifically, they were asked to indicate on a five-point scale (in the original study) or a three-point scale (in the replication) how strongly they disagreed/agreed that they would take the survey seriously, answer honestly, read questions carefully, and try to be accurate. Then they were asked to respond "*Disagree*" to an attention check question. Respondents who did not rate their intended seriousness, honesty, carefulness and accuracy an average of neutral or better and/or who did not respond as instructed in the attention check were dropped from analysis. Note that since these quality checks occurred before the experimental manipulations, they cannot be affected by, or confound, those manipulations.

### 3.4. Experimental Manipulation of Tipping Norms

Next, respondents were randomly assigned to one of six conditions of a 2 (store type) X 3 (descriptive tipping norm) between-subjects design. The original scenario consisted of a picture of the exterior of a coffee shop or convenience store corresponding to the store type condition followed by the words:

*“It is Saturday morning in April 2022 -- the COVID-19 pandemic is over and things are back to normal. You have decided to get a coffee and a donut at a new XX1 near you (pictured above). When you get there, you find that there is a five person line at the counter, so you go to the back of the line to wait your turn. The counter-worker is friendly and efficient, so it does not take long for your turn. While waiting in line, you noticed that XX2.”*

XX1 was either (i) “*coffee shop*” or (ii) “*convenience store*”. XX2 was either (i) “*no one ahead of you left a tip and when you get to the counter you see that the tip jar is empty*”, (ii) “*only a few people ahead of you left a tip and when you get to the counter you see that the tip jar is half empty*”, or (iii) “*almost everyone ahead of you left a tip and when you get to the counter you see that the tip jar is full*”.

The replication scenario was identical except for the first line, which omitted any mention of the pandemic. It read “It is Saturday morning and you have decided get a coffee and a donut at...”. Three measures were constructed from the tip jar manipulation – a nominal measure of tip jar fullness (Tip Jar), a linear measure of tip jar fullness (LJAR coded as empty = -1, half = 0, full = 1), and a quadratic measure of tip jar fullness (QJAR coded as empty = .5, half = -1, full = .5).

### 3.5. Tipping Measure

The dependent measure appeared on a separate page following the scenario containing the experimental manipulations. It consisted of a picture of an empty, half-full, or full tip jar corresponding to the descriptive tipping norm condition (see Figure 1) followed by the words: “Your coffee and donut came to \$ 6.50 including tax. All you have on you is a \$10.00 bill, so you pay with that and get \$3.50 back in change.

*Which of the following would you be most likely to put into the tip jar?”*

The response options were: “nothing”, “\$0.50”, “\$1.00”, “\$1.50”, “\$2.00”, “\$2.50”, “\$3.00”, and “\$3.50” (with an accompanying picture of the corresponding amount of money).

Responses were used to construct three measures of tipping – tip amount (TIPAMT = monetary amount of tips), tip likelihood (TIPYN = 0 if tip amount = 0, 1 if tip amount > 0), and tip size (TIPSIZE = monetary amount of non-zero tips).

#### *Manipulation Check and Opinion Measures*

Manipulation check and other opinion questions followed the dependent measure on a separate page. Respondents were asked to use a five-point scale (in the original study) or a three-point scale (in the replication) to indicate how strongly they disagreed or agreed with each of the following statements:

- 1) “The customers of this establishment tip a lot” (TIPALOT),
- 2) “The counter worker deserves to be tipped more” (DESRVESMORE),
- 3) “The counter worker will notice how much I put into the tip jar,”
- 4) “My tip will encourage other customers to tip” (ENCOURAGE),
- 5) “My tip will be visible,”

- 6) *“How much I put in the tip jar will be obvious to anyone looking at the jar when I step away,”*
- 7) *“It is customary for people in the U.S. to tip in coffee shops,” (COFFEENORM),*
- 8) *“It is customary for people in the U.S. to tip in convenience stores” (STORENORM),  
and for Study 2 only*
- 9) *“I feel pressured to put money in the tip jar” (PRESSURE)*

All the items except COFFEENORM and STORENORM were standardized within replication before the data were merged for analysis. Items 3, 5 and 6 were averaged into an index of tip visibility (TIPVIS), which had a coefficient alpha of .70.

### 3.6. Tipping Motives

Following the manipulation check, respondents were asked about their motives for, and attitude toward, tipping. Specifically, they were asked: *“Listed below are several statements expressing possible reasons or motives for tipping service workers (aka, servers). Thinking about your own tipping behavior across a variety of service situations, indicate how much YOU agree or disagree with each statement.”* A list of the tipping motives statements was constructed to have two items each reflect explicit social-esteem, future-service, reciprocity, duty, and altruistic motives for tipping. Response options in the original study ranged from 1 = *“strongly disagree”* to 7 = *“strongly agree”* while those in the replication ranged from 1 = *“disagree”* to 3 = *“agree.”* All the items were standardized within replication before the data were merged for analysis.

A factor analysis of the tipping motives using maximum likelihood extraction produced three factors with eigen values greater than one. After Promax rotation of those three factors, social-esteem and future-service motives loaded on a factor labeled extrinsic motives (EM), altruistic and reciprocity motives loaded on a factor labeled intrinsic motives (IM), and duty

motives loaded a factor given the same name (see Table 1). Indices of each motive/factor were constructed by averaging the relevant items with any missing values replaced by the mean of the other items as advocated by Roth, Switzer and Switzer (1999). These motivation indices had coefficient alphas of .83 (EM), .74 (IM), and .75 (DM).

### 3.7. Demographic Questions

Finally, respondents were asked questions about their birth year (used to calculate age), gender (Male = 0, Female = 1), racial/ethnic group membership (recoded as White =1, Other =0), education (on a six-point scale ranging from “*High School/GED or less*” to “*Professional or Doctoral Degree (JD, MD, PhD)*,” and income (on a ten-point scale ranging from “*below \$20,000*” to “*\$100,00 or more*”).

## 4. Results and Discussion

### 4.1. Overview and Manipulation Checks

Means and standard deviations for the tipping, manipulation-check, and opinion measures in this study are presented by experimental condition in Table 2. Analyses of how these outcome measures were affected by the experimental manipulations are described below.

### 4.2 Manipulation-Checks

The descriptive tipping norm (aka, Tip Jar) manipulation was checked in a 2 (Study) x 2 (Store Type) x 3 (Tip Jar) between-subjects ANOVA on rated perceptions that the customers tipped a lot (TIPALOT). This analysis produced a significant effect only for Tip Jar Fullness ( $F(2, 2,520) = 368.18, p < .001$ ). As intended, the rated perception that the customers tipped a lot increased with tip jar fullness - from -.48 when the tip jar was empty to -.19 when the tip jar was



half-full to .65 when the tip jar was full (with all the paired comparison being significant at the .05 level).

The injunctive tipping norm (aka, Store Type) manipulation was checked by comparing ratings of how customary it is to tip in coffee-shops and convenience-stores. This within-subjects comparison had to be done using unstandardized data which then necessitated separate analyses for each study. As expected this analysis indicated that respondents in both studies rated the customariness of tipping in coffee-shops higher than that in convenience-stores (Study 1: means = 3.55 vs 2.56 on a 1-5 scale,  $t(1167) = 25.63$ ,  $p < .001$ ; Study 2: means = 3.35 vs 2.73 on a 2-4 scale,  $t(1362) = 24.16$ ,  $p < .001$ ). Note that the analysis of DESERVESMORE in section 4.5 provides additional evidence for the effectiveness of the injunctive tipping norm manipulation.

#### *4.3. Effects on Tipping Behavior*

The effects of the experimental manipulations on tipping were assessed in three 2 (Study) x 2 (Store Type) x 3 (Tip Jar Fullness) between-subjects ANOVAs using TIPYN, TIPSIZE, and TIPAMT as outcome measures. The analysis of TIPYN produced a significant effect only for Store Type ( $F(1,2,519) = 38.32$ ,  $p < .001$ ). Respondents were more likely to tip the coffee-shop worker than the convenience-store worker (means = .91 vs .83). This result suggests that the decision to tip (vs stiff) counterworkers is affected by injunctive tipping norms, but not by descriptive ones, or by the interaction of injunctive and descriptive tipping norms.

The analysis of TIPSIZE produced significant effects only for Study ( $F(1, 2,195) = 5.49$ ,  $p < .02$ ), Store Type ( $F(1, 2,195) = 6.34$ ,  $p < .02$ ), and their interaction ( $F(1, 2,195) = 4.16$ ,  $p < .05$ ). Respondents who said they would tip reported that they would give larger tips in Study 2 than in Study 1 (means = \$1.39 vs \$1.30), perhaps because positive affect in response to the

prospect of leaving the pandemic behind elevated tipping. In addition, those respondents who said they would tip reported that they would give tip larger amounts when in a coffee-shop than when in a convenience-store (means = \$1.40 vs \$1.29), but this effect was carried by Study 2 (Study 1 means = \$1.31 vs \$1.29; Study 2 means = \$1.49 vs \$1.30). Why the effect of Store Type was limited to Study 2 is unclear. Perhaps the positive affect (or post-pandemic relief) speculated to be experienced by participants in Study 2 affects normative more than counter-normative tipping. Regardless of the explanation, these results suggest that the decision about how much to tip counterworkers (conditioned on leaving a tip) is at least sometimes affected by injunctive tipping norms, but not by descriptive ones, or by the interaction of injunctive and descriptive tipping norms

The analysis of TIPAMT produced significant effects only for Study ( $F(1,2,519) = 8.42, p < .005$ ) and Store Type ( $F(1, 2,519) = 25.03, p < .001$ ). Across all respondents, people said they would tip more in Study 2 than in Study 1 (means = \$1.23 vs \$1.11) and would tip coffee-shop workers more than convenience-store workers (means = \$1.27 vs \$1.07). These effects are obviously just a combination of the effects reported in the previous analyses of TIPYN and TIPSIZE. Together, all the analyses of tipping outcomes suggest that tipping of counterworkers is affected by injunctive tipping norms, but not by local descriptive tipping norms, or by the interaction of local descriptive tipping norms with injunctive tipping norms.

#### *4.4. Effects on Influence of Tipping Motives*

The extent to which specific tipping motives affected tipping and the extent to which these effects were moderated by the experimental manipulations were assessed in regression analyses predicting tipping outcomes from Store Type, Linear Tip Jar Fullness (LJAR), Quadratic Tip Jar Fullness (QJAR), Extrinsic Tipping Motives (EM), Intrinsic Tipping Motives

(IM), Duty Tipping Motives (DM), Store X EM, Store x IM, Store x DM, LJAR x EM, LJAR x IM, LJAR\*DM, QJAR x EM, QJAR x IM and QJAR\*DM (see Table 3). In these analyses, extrinsic tipping motives reliably increased tipping likelihood ( $B = .107$ ,  $SE = .011$ ,  $p < .001$ ), tip sizes (conditioned on leaving a tip) ( $B = .321$ ,  $SE = .038$ ,  $p < .001$ ), and tip amounts (unconditioned) ( $B = .408$ ,  $SE = .035$ ,  $p < .001$ ). Intrinsic tipping motives reliably increased tipping likelihood ( $B = .106$ ,  $SE = .012$ ,  $p < .001$ ) and tip amounts ( $B = .074$ ,  $SE = .037$ ,  $p < .05$ ), but had no overall effect on tip sizes ( $B = -.053$ ,  $SE = .046$ , n.s.). Duty tipping motives increased tipping likelihood ( $B = .024$ ,  $SE = .010$ ,  $p < .02$ ), but had no reliable effects on tip sizes ( $B = -.068$ ,  $SE = .036$ , n.s.) or tip amounts ( $B = -.024$ ,  $SE = .032$ , n.s.).

The analysis of TIPYN produced significant interactions for EMxStore ( $B = -.036$ ,  $SE = .016$ ,  $p = .029$ ), EMxLJAR ( $B = -.021$ ,  $SE = .010$ ,  $p = .033$ ), and DMxLJAR ( $B = .028$ ,  $SE = .009$ ,  $p = .003$ ). Extrinsic motives increased tipping of convenience-store workers more than that of coffee-shop workers and of both workers more the less full the tip jar was. Duty motives increased tipping likelihood more when the tip jar was fuller. These interactions conceptually replicate similar effects of occupational tipping norms reported by Lynn (2016b, 2018). The interaction involving duty motives suggests that people are more likely to feel an obligation to tip the greater the number of other people who tip, which makes intuitive sense. However, the interactions involving extrinsic motives suggest that extrinsic rewards drive tipping more strongly when both injunctive and descriptive tipping norms are weaker. Common sense suggests that ITNs at least would have the opposite effect and increase the influence of extrinsic motives. No compelling explanation for the anomalous interaction observed comes to mind, so it will be ignored as a likely Type 1 error in the remainder of this paper.

The analyses of TIPSIZE and TIPAMT both produced a significant interaction for IMxLJAR (TIPSIZE:  $B = -.067$ ,  $SE = .033$ ,  $p = .046$ ; TIPAMT:  $B = -.087$ ,  $SE = .039$ ,  $p = .026$ ). Intrinsic motives decreased tip sizes (conditioned on leaving a tip) more the fuller the tip jar (see Figure 2) and this contributed to the weakening of their positive effects on unconditioned tip amounts as tip jar fullness increased. Perhaps altruism and reciprocity motives decrease tip sizes when others' tip more because tips from others reduce the perceived need and/or deservingness of servers for additional tips (see analysis of DESERVESMORE in Section 4.3).

#### 4.5. *Effects on Opinion Measures*

The potential effects of injunctive and descriptive tipping norms on perceptions of server deservingness of more tips (DESERVESMORE), tip visibility (TIPVIZ), and ability of own tip to encourage others tipping (ENCOURAGE) were assessed in three 2 (Study) x 2 (Store Type) x 3 (Tip Jar) between-subjects ANOVAs. The analysis of DESERVESMORE produced significant effects for Store Type ( $F(1, 2,524) = 19.00$ ,  $p < .001$ ) and Tip Jar ( $F(2, 2,524) = 9.22$ ,  $p < .001$ ). Consistent with stronger injunctive tipping norms for coffee-shops than for convenience-stores, people thought the worker deserved more tips in the former than the latter setting (means = .08 vs -.09). In addition, the rated perception that the worker deserved more tips decreased with tip jar fullness -- from .11 when the tip jar was empty to -.02 when the tip jar was half-full to -.09 when the tip jar was full (with the means for half-full and full tip jars differing significantly at the .05 level from that for the empty tip jar, but not from one another).

The analysis of TIPVIZ produced a significant effect only for Tip Jar ( $F(2, 2,525) = 145.84$ ,  $p < .001$ ). Respondents thought the visibility of their tip would decrease with tip jar fullness -- from .35 when the tip jar was empty to -.14 when the tip jar was half-full to -.23 when the tip jar was full (with all the paired comparison being significant at the .05 level).

The analysis of ENCOURAGE produced a nearly significant effects of Store Type ( $F(1, 2,515) = 3.58, p < .06$ ) and Tip Jar ( $F(2, 2,515) = 12.36, p < .001$ ). Respondents thought their coffee-shop tip would encourage others to tip marginally more than would their convenience-store tip (means = .038 vs -.038). More reliably, they thought their tip would encourage others to tip most when the tip jar was empty (mean = .11), less when the tip jar was full (mean = .02) and least when the tip jar was half-full (mean = -.13). All paired comparisons were reliable at the .05 level - except for the empty vs. full comparison, whose p-value was .09.

Ratings of felt pressure to tip (PRESSURE) were obtained only in Study 2, so the potential effects of injunctive and descriptive tipping norms on this measure were assessed in a 2 (Store Type) x 3 (Tip Jar) between-subjects ANOVA. This analysis produced a significant effect for Tip jar ( $F(2, 1357) = 11.44, p < .001$ ). Respondents feeling of pressure to tip increased with tip jar tip jar fullness -- from -.14 when the tip jar was empty to -.06 when the tip jar was half-full to .16 when the tip jar was full. All paired comparisons were reliable at the .05 level - except for the empty vs. half-full comparison, whose p-value was .21.

In summary, tip jar fullness increased respondents' feelings of being pressured to tip, but decreased their perceptions that the worker deserved more tips, that their tips would be noticed, and that their tips would encourage others to tip. The countervailing effects of these different perceptions may explain the null effects of tip jar fullness on tipping that were presented in Section 4.3.

## 5. Summary and Conclusions

The key results of this study can be summarized in the following five statements about the effects of tipping norms. First, stronger injunctive tipping norms increased the perceptions that counterworkers deserve more tips and that putting money into a tip jar would encourage others to tip as well as the likelihood of tipping counterworkers and (sometimes) the sizes of tips given to them. Second, stronger descriptive tipping norms had no reliable main effects on tipping likelihood or tip size. Third, stronger descriptive tipping norms increased feelings of pressure to tip but decreased perceptions that counterworkers deserved more tips, that tips put into a tip jar would be visible, and that tips put into a tip jar would encourage others to tip. Fourth, stronger descriptive tipping norms (i) decreased the positive effect of intrinsic motivation on the likelihood of tipping counterworkers, (ii) increased the positive effect of duty motivation on the likelihood of tipping counterworkers, and (iii) increased the negative effect of intrinsic tipping motives on the sizes of tips given to counterworkers. Finally, stronger descriptive tipping norms did not moderate the effects of intrinsic tipping motives on the likelihood of tipping. Each of these statements is discussed in more detail below.

### *5.1. Main effects of injunctive tipping norms*

The observed main effects or simple main effects of the store type manipulation on *DESERVESMORE*, *ENCOURAGE*, *TIPYN* and *TIPSIZE* are all consistent with theoretically expected effects of injunctive tipping norms on these outcomes. Indeed, the manipulation of store type was intended as a manipulation of ITN and the finding that respondents rated tipping of coffee-shop workers as more customary than that of convenience-store workers supports the interpretation of its effects as ITN effects. This manipulation of injunctive tipping norms is similar to Lynn's (2016b, 2018) use of occupations differing in tipping frequency as a

manipulation of descriptive tipping norms, but is superior to those manipulations because the nature and prices of the services provided as well as the method of tip payment were consistent across store type in the current study. Nevertheless, coffee-shops and convenience-stores differ on many other dimensions, and it remains a remote possibility that one of those other differences is driving the observed effects. Furthermore, counterwork differs from other services in many ways and it is possible that one or more of those differences affect the generalizability of the current results. Thus, the current study should be seen as shedding light on ITN effects, but not as definitively answering questions about these effects.

### *5.2. Null effects of descriptive tipping norms on tipping*

The null effects of tip jar fullness on tipping likelihood and tip size in this study differ from related findings by Gueguen (2007). Gueguen (2007) reported that customers at a bakery in France tipped more often and tipped larger amounts when they were exposed to another customer putting money into a mostly empty tip jar than when they were not (with assignment to conditions being random). His findings suggest that the current null results could be Type 2 errors. Although the current study's large sample size means that any true effect not detected must be small, more powerful tests of tip jar fullness effects on tipping were conducted by combining the current data with four other non-reported studies conducted by the author using the same tip jar manipulation. The tipping measures differed across those studies – some were like the ones reported here and others asked subjects to write in any amount (including zero) they would tip. After removing extreme outliers from the latter measures (double digit tips on a single digit bill) and standardizing the TIPAMT and TIPSZ measures within each study, the combined data across all six studies was analyzed in 3-level (empty vs half-full vs full) between-subjects ANOVAs followed by paired-comparisons. The tip jar manipulation had only a marginally

reliable effect on TIPAMT ( $F(2, 4351) = 2.55, p = .078$ ), but did produce reliable effects for TIPYN ( $F(2, 4351) = 4.33, p < .02$ ) and TIPSZ ( $F(2, 3649) = 5.99, p < .005$ ). Respondents were reliably ( $p < .05$ ) more likely to leave a tip when the tip jar was full than when it was empty or half-full (full probability = .88, empty and half-full probabilities both = .85), but they left reliably ( $p < .05$ ) smaller tips when it was full or half-full than when it was empty (empty z-score mean = .06, half-full z-score mean = -.02, and full z-score mean = -.07). Combining these effects resulted in tip amounts in the empty condition being reliably larger than in the half-full condition and marginally reliably larger than in the full condition (empty z-score mean = .04, half-full z-score mean = -.03 and full z-score mean = -.03). Thus, using all the available data indicates that tip jar fullness does affect tip vs stiffing and tip-size decisions but those effects are small and go in opposite directions, so that tip jar fullness does not increase the overall tip amounts that workers receive (if anything it decreases it). From a practical perspective, all of these results suggests that the practice of salting tip jars is unlikely to increase tip income.

### *5.3. Psychological main effects of descriptive tipping norms*

The tip jar fullness manipulation included corresponding descriptions of differences in observed tipping behavior and was a clear and unconfounded manipulation of local descriptive tipping norms. It's main effects on DESERVESMORE, TIPVIZ, ENCOURAGE, and PRESSURE are all consistent with different theoretically relevant effects of descriptive tipping norms and highlight the complexity of DTN effects on psychology and behavior. The countervailing effects of these different perceptions on tipping may explain the null effects of tip jar fullness on tipping that were presented in Section 4.3 and the opposing effects reported in Section 5.2. However, these effects may not generalize to other contexts and other psychological



effects not measured here may also occur. Thus, the current study is just the beginning of what should be more research into the effects of DTNs.

#### *5.4. Moderation of tipping motive effects*

The effects on tipping likelihood of the interactions of tip jar fullness with the extrinsic and duty motives for tipping both conceptually replicate similar interactions involving occupational tipping norms reported by Lynn (2016b, 2018a). The interaction involving duty motives suggests that people are more likely to feel an obligation to tip the greater the number of other people who tip, which makes intuitive sense. However, the interaction involving extrinsic motives suggest that extrinsic rewards drive tipping more strongly when descriptive tipping norms are weaker, which is not intuitive. The fact that this interaction replicates previous findings using a different manipulation of descriptive tipping norms and measure of tipping likelihood suggest that something real is going on, but it is not clear what that real thing might be. Hopefully, this is a puzzle that others can solve in the future.

The finding that descriptive tipping norms did not moderate the effects of intrinsic tipping motives on tipping likelihood represents a failure to conceptually replicate Lynn's (2016b, 2018a) findings that occupational tipping norms did moderate altruism and reciprocity motive effects on tipping likelihood. Moreover, this is the second time an attempted conceptual replication using different manipulations of tipping norms failed. Lynn and Brewster (2020) found that manipulations of the tipping norms in a foreign country had no impact on the effects of altruistic or reciprocity motives for tipping on the likelihood that travelers to that country would tip various service providers. These repeated failures at replication suggest that the norm x altruism and norm x reciprocity interactions observed by Lynn (2016b, 2018) may be specific to his use of occupations as manipulations of tipping norms. In turn, this lends support to the idea

that these interactions may reflect the moderating effects of other occupational characteristics (such as service customization and server status) associated with more frequent receipt of tips (Lynn 2016a, 2019) rather than to the moderating effects of descriptive tipping norms.

### 5.5. *Conclusions*

Economists recognize that tipping is guided by injunctive and descriptive norms (Azar, 2020; Conlin, Lynn and O'Donoghue, 2003) but their influence on tipping is neither simple nor universal. The findings of this study extend our knowledge about these effects by providing answers to several open questions identified in the introduction. Specifically, they suggest that: (i) injunctive tipping norms have similar positive effects on both the likelihood of tipping counterworkers and (at least sometimes ) the size of tips given to them, (ii) local descriptive tipping norms have little to no main effects on the tipping of counterworkers, (iii) descriptive and injunctive tipping norms do not moderate one another's effects on the tipping of counterworkers, and (iv) local descriptive tipping norms do moderate duty and extrinsic (but not intrinsic) motive effects on tipping likelihood. Nevertheless, these answers are only tentative and questions about their generalizability to other tipping contexts remain. Furthermore, tipping norms vary across many dimensions – e.g., some injunctive and descriptive norms are local while others are national, some injunctive norms have precise prescriptions while others are more ambiguous, some descriptive tipping norms describe the average likelihood of tipping while others describe the average tip size. More research is needed to clarify the effects of these variations in tipping norms and to understand the puzzling anomaly that is tipping.

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Figure 1. Picture of the tip jar in the empty, half-empty, and full conditions.



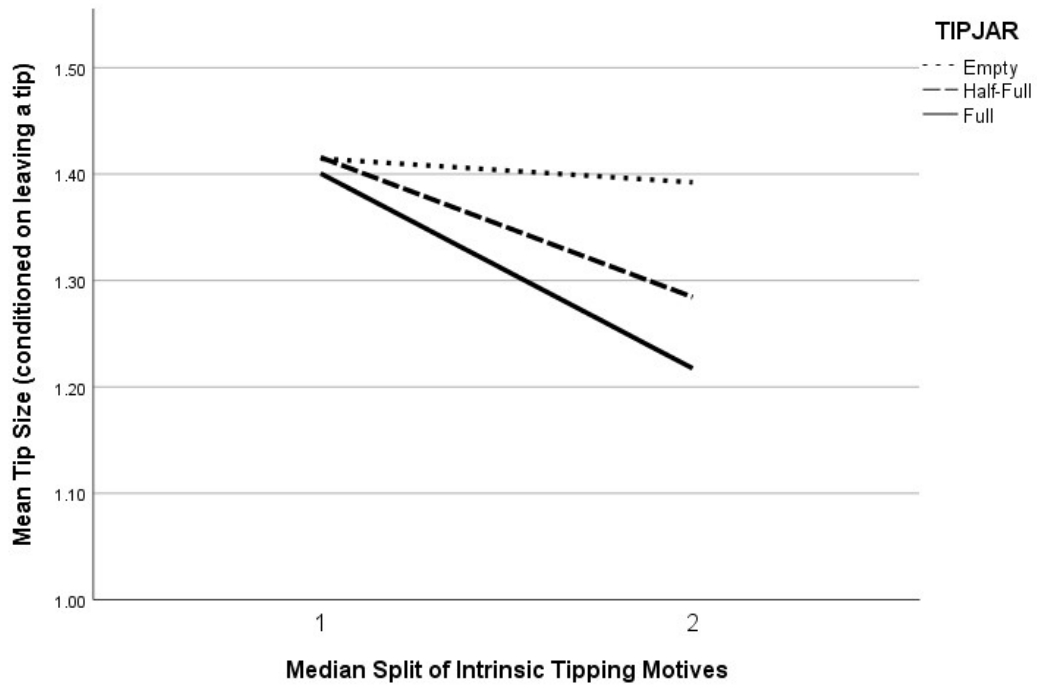


Figure 2. Intrinsic tipping motives decrease non-zero tip sizes more as tip jars become more full.

Table 1. Pattern matrix from factor analysis of tipping motive statements.

Motive Statements	Extrinsic Motives	Intrinsic Motives	Duty Motives
I tip so the server will remember me positively the next time I encounter him/her.	.861	.182	-.142
I tip in order to get good service on my next visit.	.891	.148	-.155
I tip in order to gain social status/respect.	.596	-.211	.276
I tip in order to impress the people I am with.	.550	-.265	.280
I tip to help servers.	.016	.708	.094
I tip to make up for servers' low wages.	.008	.560	.230
I tip in order to repay the server for his/her efforts.	.046	.738	.028
I tip to reward good service.	.033	.652	-.041
I tip because it is expected.	-.061	.070	.744
I tip out of a sense of duty.	-.027	.179	.770

Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization.  
Rotation converged in 5 iterations.

Table 2. Means, standard deviations, and sample sizes for key outcome variables by experimental condition.

Measure	Coffee Shop			Convenience Store		
	Empty Jar	Half-Full Jar	Full Jar	Empty Jar	Half-Full Jar	Full Jar
TIPAMT	1.35 <sup>a</sup> (1.04) 424	1.27 <sup>a</sup> (1.02) 426	1.22 <sup>ac</sup> (.97) 427	1.08 <sup>b</sup> (1.05) 421	1.04 <sup>b</sup> (.99) 419	1.10 <sup>bc</sup> (1.01) 414
TIPYN	.92 <sup>a</sup>	.89 <sup>ac</sup>	.93 <sup>a</sup>	.81 <sup>b</sup>	.82 <sup>bd</sup>	.86 <sup>cd</sup>
TIPSZ	1.47 <sup>ad</sup> (1.00) 388	1.42 <sup>ac</sup> (.97) 380	1.31 <sup>bc</sup> (.94) 397	1.33 <sup>bcd</sup> (1.01) 342	1.26 <sup>b</sup> (.95) 345	1.28 <sup>bc</sup> (.97) 355
TIPALOT	-.46 <sup>a</sup> (1.01) 423	-.20 <sup>c</sup> (.88) 426	.71 <sup>b</sup> (.69) 428	-.50 <sup>a</sup> (1.01) 423	-.19 <sup>c</sup> (.92) 421	.59 <sup>d</sup> (.75) 411
DESERVESMORE	.24 <sup>a</sup> (.90) 424	.06 <sup>b</sup> (.99) 427	-.05 <sup>bc</sup> (.99) 428	-.01 <sup>bd</sup> (1.01) 423	-.11 <sup>cd</sup> (1.06) 421	-.14 <sup>cd</sup> (1.00) 413
TIPVIZ	.36 <sup>a</sup> (.69) 424	-.16 <sup>bc</sup> (.77) 427	-.24 <sup>b</sup> (.76) 428	.34 <sup>a</sup> (.65) 423	-.12 <sup>c</sup> (.80) 422	-.21 <sup>bc</sup> (.81) 413
ENCOURAGE	.20 <sup>a</sup> (.86) 422	-.13 <sup>b</sup> (1.00) 426	.04 <sup>c</sup> (1.00) 424	.01 <sup>c</sup> (.99) 422	-.13 <sup>b</sup> (1.07) 421	.01 <sup>c</sup> (1.03) 412
PRESSURE	-.16 <sup>a</sup> (.96) 226	-.09 <sup>a</sup> (.99) 231	.18 <sup>b</sup> (.98) 231	-.13 <sup>a</sup> (1.02) 229	-.03 <sup>ac</sup> (1.02) 223	.15 <sup>bc</sup> (1.00) 223

Note: Means within each row not sharing a common superscript are reliably different at the .05 level based on a least significant difference test.

Table 3. Coefficients (and standard errors) from regression of various tip measures on tipping motives, store-type, and tip-jar main effects and selected interactions

Coefficient	TIPYN	TIPSZ	TIPAMT
Intercept	.83*** (.01)	1.28*** (.03)	1.08*** (.03)
Store (Convenience =0, Coffee = 1)	<b>.08***</b> (.01)	<b>.12**</b> (.04)	<b>.20***</b> (.04)
Linear Tip Jar (LJAR)	.01 (.01)	-.05 (.03)	-.03 (.02)
Quadratic Tip Jar (QJAR)	.01 (.01)	-.02 (.03)	-.001 (.03)
Extrinsic Tipping Motives (EM)	<b>.11***</b> (.01)	<b>.32***</b> (.04)	<b>.41***</b> (.04)
Intrinsic Tipping Motives (IM)	<b>.11***</b> (.01)	-.05 (.05)	<b>.07*</b> (.04)
Duty Tipping Motives (DM)	<b>.02*</b> (.01)	-.07 (.04)	-.02 (.03)
EM x Store	<b>-.04*</b> (.02)	-.02 (.05)	-.04 (.05)
IM x Store	.000 (.02)	.05 (.06)	.05 (.05)
DM x Store	-.03 (.02)	.05 (.05)	.002 (.05)
EM x LJAR	<b>-.02*</b> (.01)	.01 (.03)	-.01 (.03)
IM x LJAR	.004 (.01)	<b>-.09*</b> (.04)	<b>-.07*</b> (.03)
DM x LJAR	<b>.03**</b> (.01)	.02 (.03)	.04 (.03)
EM x QJAR	-.002 (.01)	-.01 (.04)	-.01 (.04)
IM x QJAR	-.01 (.01)	.02 (.04)	.000 (.04)
DM x QJAR	.002 (.01)	.04 (.04)	.03 (.03)
Error df	2,504	2,182	2,504
R <sup>2</sup>	.14	.07	.11

\* p &lt; .05, \*\*p &lt; .01, \*\*\* p &lt; .001