Tipping, firm strategy, and industrial organization

Azar, Ofer H.

Ben-Gurion University of the Negev

2006

Tipping, Firm Strategy, and Industrial Organization

Ofer H. Azar

Department of Business Administration

School of Management

Ben-Gurion University of the Negev

Israel

E-mail: azar@som.bgu.ac.il

ABSTRACT

Tipping is a phenomenon that has been studied for many years, but is receiving increased attention in recent years. The magnitude of tips is very large – in the US, for example, tips in the food industry alone amount to about $42 billion each year, and tips are given in many other establishments and countries, so annual worldwide tips are much higher than that. Millions of workers in the US alone derive most of their income from tips and tipping is prevalent in numerous countries and occupations. These are all good reasons to study tipping, but it is clear that tipping has created much interest also because it is puzzling from a theoretical perspective. The common assumption in economics that people maximize utility (which is derived by consuming various goods) subject to a budget constraint implies that people should give up money only when they receive something in return. This is not the case, however, when people

tip: service has already been provided by the time the tip is given, so the tip is a voluntary payment that does not buy something real (such as improved service) in return.

The literature on tipping can be divided to two main areas. The first area can be termed "understanding tipping behavior." This includes studies that try to understand why people tip, what affects their tipping behavior, why tipping is different across countries, etc. The second research area, which started to receive attention more recently, can be defined as "tipping, firm strategy, and industrial organization." This part of the literature deals with the effect of tipping on firms and markets. For example, firms can sometimes choose between voluntary tipping and compulsory service charges – which one is better for the firm? How should the existence of tips affect optimal pricing by the firm? How should firms monitor workers and provide incentives to them when tipping exists? Why does tipping exist in some industries but not in others? Does tipping increase social welfare in industries in which it is the norm? All these questions belong to this second research area and demonstrate the close relationship of tipping to industrial organization and firm strategy. Several review articles made an attempt to summarize and synthesize the extensive literature in the area of understanding tipping behavior, but no article has offered an extensive literature review that focuses on the area of "tipping, firm strategy, and industrial organization." The purpose of this paper, therefore, is to review and summarize the literature in this area of research.

Keywords: tipping; firm strategy; business strategy; industrial organization; social norms; norms; restaurants; waiters; servers; the service industry; tips; gratuities; strategy
JEL codes: Z13, L83, D11, D12, A12

INTRODUCTION

Tipping is a phenomenon that has been studied by psychologists for many years, but in economics it started to receive attention only more recently. There are several reasons why economists find tipping to be a worthwhile research topic. One reason is that tipping is a significant economic activity in terms of the amounts involved. In the US, for example, tips in the food industry alone amount to about $42 billion each year.[1] Since tips are also given in many other establishments and countries, annual worldwide tips are even a much higher figure.

In addition to the amounts involved, tipping also affects very significantly the lives of millions of people. Millions of workers in the United States alone derive a significant portion of their income, often most of it, from tips. Wessels (1997), for example, reports that servers in full-course restaurants earn 58% of their income from tips; those in counters earn 61% of their earnings in tips (in fact, the true percentages are likely to be much higher, because tips are often unreported). In the United States, for over two million workers the primary occupation is being

[1] The extent of tipping has to be estimated because tips are often unreported for tax purposes (according to Hemenway (1993), for example, the only income with a lower compliance rate is illegal income). Sales in the U.S. in 2005 of food and alcoholic beverages to consumers in full-service restaurants, snack and nonalcoholic beverage bars, bars and taverns, and lodging places, were $164.8, $16.9, $15.3, and $25.2 billion, respectively (U.S. Census Bureau, 2006, Table 1269; the numbers are a projection). Summing the four numbers gives sales of $222.2 billion. A recent study of tipping in various restaurants (Parrett, 2003, Table 14) found that the average tip percentage (a simple average) was 23.22%. However, average tip amount was $6.52 and average bill size was $34.67, indicating that the weighted average (weighted by the bill size) was a tip of 18.8%. Being conservative and using the latter percentage, the product of sales of $222.2 billion by 18.8% gives an estimated amount of annual tips of $41.8 billion.

servers; the estimate for the number of servers including those who are servers as a secondary occupation is over three million. In addition, tipping is common in many other occupations in addition to waiters: Lynn, Zinkhan and Harris (1993), for example, considered 33 service professions that are tipped.

In addition to the economic significance of tipping, another reason why tipping research is interesting is that tipping is puzzling from a theoretical perspective. The traditional assumption in economics, that people maximize utility (which is derived by consuming various goods) subject to a budget constraint, implies that people should give up money only when they receive goods or services in return. This is not the case, however, when people tip: service has already been provided by the time the tip is given, so the tip is a voluntary payment that does not buy something real (such as improved service) in return.

This contradiction between the fact that the vast majority of people tip where this is the norm (Azar, 2006) and the predictions of traditional economic theory, which assumes that people are "Homo Economicus" - selfish economic agents who have no feelings (just a desire to maximize their utility from consumption) - led to a literature that tries to understand why people tip (see, for example, Lynn and Grassman, 1990; Bodvarsson, Luksetich and McDermott, 2003; Azar, 2006).

Traditional economic theory implies that the only motivation for tipping can be future service consideration. However, many people tip also when they travel and do not intend to have any future service in the same restaurant or taxi in the future, suggesting that future service cannot be the sole motivation for tipping. In fact, Azar (2007a) suggests that empirical tipping behavior and in particular comparing tipping behavior of repeating and non-repeating customers implies that future considerations do not play a role at all in tipping. That is, people do not make strategic

considerations about how their tipping today will affect the incentives of the service provider and therefore the service they will receive in the future.

Another reason to study tipping is that better understanding of the reasons for tipping can contribute to our knowledge not only about tipping, but also about other economic behaviors that result from social and psychological motivations, such as donations and gift giving. All these behaviors seem to be motivated in large part by psychological motivations such as altruism, reciprocity, fairness, a desire to follow social norms, an aspiration to appear as a generous person, etc. While not all of these motivations are related to each of the behaviors mentioned (tipping, donations, and gift giving), many motivations are related to more than one behavior.[2]

In addition, better understanding of tipping can also help to address several policy questions, for example, whether tipped workers should receive minimum wages in addition to tips. From the firm's perspective, other questions arise. Firms can decide, for example, to replace tipping with compulsory service charges – is this a smart policy? Should firms invest in screening applicants for tipped jobs, or let tips screen the bad performers (who will earn low tips and quit)?

The research on tipping can be classified into three main types of studies. One common type of study is to interview restaurant customers as they leave the restaurant and ask them how much they tipped, how much was the bill, and various questions regarding their dining experience (such as the quality of service, the number of people dining, how often they eat at that restaurant, etc.). The data collected then allow to analyze what affects tipping behavior. A few prominent examples for this type of study include Bodvarsson and Gibson (1994; 1997), Conlin, Lynn, and O'Donoghue (2003), Bodvarsson, Luksetich and McDermott (2003), and Parrett (2003).

---

[2] Another indication for the close relationship between gift giving and tipping is that models of gift giving can be easily applied to tipping as well, see for example Ruffle (1999).

Another common approach is to analyze various questions related to tipping using theoretical economic models. A few examples for this approach include Ben-Zion and Karni (1977), Schwartz (1997), Azar (2004a), Azar (2005a), and Azar and Tobol (2008). A third common type of study is to ask waiters (or other service providers) to behave in a certain way, and record how this behavior affects tips. Examples include Crusco and Wetzel (1984), Stephen and Zweigenhaft (1986), Hornik (1992), Lynn and Mynier (1993), and Lynn, Le and Sherwyn (1998).

Some additional types of studies, although less common than the three types mentioned above, still deserve a short discussion. One such type is comparing tipping practices across countries, for example, Lynn, Zinkhan and Harris (1993), and Lynn (1994; 1997; 2000a; 2000b). Other study types include the use of hypothetical questions about how much one would tip in certain circumstances (e.g., Bodvarsson and Gibson, 1999; Azar, 2006), lab experiments that mimic tipping situations (Ruffle, 1998; Parrett, 2003), the comparison of tipping practices across occupations (Azar, 2005b), historical examination of tipping practices (Azar, 2004b), and meta-analysis of the results in previous studies (Lynn and McCall, 2000a).

While as mentioned above there are several types of studies on tipping in terms of the methodology used, most of the research on tipping can be categorized in one of two main areas. The first area can be termed "understanding tipping behavior." This includes studies that try to understand why people tip, what affects their tipping behavior, why tipping is different across countries, etc.

The second research area, which started to receive attention more recently, can be defined as "tipping, firm strategy, and industrial organization." This part of the literature deals with the effect of tipping on firms and markets. For example, firms can sometimes choose between voluntary tipping and compulsory service charges – which one is better for the firm? How should

the existence of tips affect optimal pricing by the firm? How should firms monitor workers and provide incentives to them when tipping exists? Why does tipping exist in some industries but not in others? Does tipping increase social welfare in industries in which it is the norm? All these questions belong to this second research area and demonstrate the close relationship of tipping to industrial organization and firm strategy.

Several review articles made an attempt to summarize and synthesize the extensive literature in the area of understanding tipping behavior, for example, Lynn and McCall (2000b), Azar (2007b), Lynn (2006), and Azar (2007c). No article, however, has offered an extensive literature review that focuses on the area of "tipping, firm strategy, and industrial organization." The purpose of this paper, therefore, is to review and summarize the literature in this area of research.

TIPPING, FIRM STRATEGY, AND INDUSTRIAL ORGANIZATION:

A LITREATURE REVIEW

The earliest contribution to the literature in this area was offered by Ben-Zion and Karni (1977). They built a theoretical demand and supply framework for a repeated interaction between a customer who chooses how much to tip and a service provider who chooses how much effort to exert. They showed that the marginal reward for effort must be positive for the service provider to exert more than the minimal effort level. They also proved that tips tend to be smaller when turnover of customers or service staff is higher and when customers visit the establishment less frequently. They concluded that tips are consistent with self-interest seeking behavior only for

the case of repetitive customers, and that in order to explain why one-time customers tip one should consider altruistic behavior and social norms, which are not included in their model.

Jacob and Page (1980) examined the issue of buyer monitoring in general and concluded that for certain parameter values in their model, firms will use both buyers and owners to supervise employees. As examples they mention tipped waiters, who are monitored and paid by the owners but also by the customers, and commission-sales clerks who are monitored by supervisors whom the owners hired. Sisk and Gallick (1985) argue that tips protect the buyer from an unscrupulous seller (or his agent) when the brand-name mechanism for assuring contractual performance is insufficient. Their analysis suggests that differences in the ratio of tip to the marginal cost of the service across customers do not necessarily indicate price discrimination, but rather may result from implicit contracting (i.e., tipping serves as an informal contract that allows the customer to pay or not to pay the tip based on how satisfied he is with the service).

Bodvarsson and Gibson (1994), while being interested mostly in an empirical examination of tipping behavior, also develop an economic model in which the customer tips according to the service quality, service quantity, and the probability of transacting with the server in the future. The server has two supply functions, one for service quantity and the other for service quality. These functions depend on the expected tip, the server's opportunity costs, and the probability the server assigns to serving the customer in the future.

Schwartz (1997) claims that the low correlation between tips and service quality refutes the argument that tipping is an efficient quality-control mechanism. Instead, he suggests that tipping may exist because it increases the firm's profits. Using a theoretical economic model, he shows that tipping can increase the firm's profits when consumer segments differ in their demand

functions and their propensity to tip. He then claims that this theoretical framework can also serve as a useful tool for managers in selecting a tipping policy for their firms.

Wessels (1997) suggests that tips allow restaurants to pay servers lower wages. As more servers are hired, each serves fewer meals and earns less in tips. As a result, restaurants must pay a higher wage. This gives them monopsony power over wages. Over some range, a higher minimum wage should increase employment. Empirically, Wessels found the full 'reverse C' monopsony pattern of employment for restaurants, with employment first going up and then down as the minimum wage is increased.

Conlin, Lynn, and O'Donoghue (2003) suggest that if efficiency requires the server to exert some effort, the server must have an incentive to exert this effort. While a service contract can provide this incentive, writing such contract between the customer and the server involves large transaction costs. Tipping, they argue, serves as a substitute that saves these transaction costs.

Azar (2007b) agrees with their view, but claims that in fact tipping can save not only the costs of writing a contract, but also the costs of enforcing it. He suggests that these enforcements costs might be higher than the costs of writing the contract. While writing a contract between each customer and worker is very costly, the firm could write a standard contract that applies to all of its workers and customers. The main problem, Azar argues, is therefore the enforcement of such contract: who will monitor the service quality? Will the customer have to demonstrate that service quality was not satisfactory, or the worker to show that service quality was good? How can one attest what the service quality was when service is personal and depends to a large extent on the friendliness of the worker? Azar suggests that society, by creating the social norm of tipping and making people who do not tip appropriately feel embarrassed and unfair, provides an efficient enforcement mechanism. People then tip without the need for third party involvement in

the evaluation of service quality, because their emotional disutility if they stiff after receiving good service exceeds the monetary gains.

Azar (2004a) combines a theoretical model about the evolution of social norms with historical evidence about trends in tipping practices in a couple of industries (the restaurant industry and taxis). His theoretical model suggests that when a norm is costly to follow and people do not derive benefits from following it other than avoiding social disapproval, the norm erodes over time. Using etiquette guides from different periods, he shows that tip percentages in restaurants and taxis actually increased over the years, suggesting that people derive benefits from tipping beyond just the willingness not to deviate from the social norm. For example, possible benefits he mentions are that customers want to impress others and also improve their self-image as being generous and kind. Azar then also analyzes the implications of his model to the norm of not cooperating with new workers who accept lower wages. The model suggests that incumbent workers have reasons to follow this norm in addition to avoiding social disapproval.

Barkan and Israeli (2004) study the ability of servers to predict their own tips. A distinction is made between the two roles of servers with regard to tipping behavior: the role of an expert and the role of a manager. As experts, servers understand the relations between several predictors and tip size, and are able to predict the tip they are about to receive. As managers, servers designate certain tip amounts, and then manage the service encounter so that their predictions are realized. This study maps the necessary conditions for an expert position and outlines the process for managing a service encounter. Empirical testing suggests that servers have an impressive predictive ability. The findings also offer some support to the view of the role of the server as a manager.

Azar (2004c) analyzes the optimal choice of monitoring intensity by the firm when workers face external incentives (incentives that are not provided by the firm), such as tips, satisfaction from working well, or the desire to build reputation in order to be more attractive to other employers. The theoretical model suggests that an increase in such external incentives reduces optimal monitoring intensity but nevertheless increases effort and profits unambiguously. This means that firms are better off when tipping becomes more sensitive to service quality, and in particular they are also better off with tipping than with compulsory service charges (since the latter have no sensitivity to service quality, while tips do). This finding is consistent with the fact that U.S. firms supported the establishment of tipping in the late 19th century. However, the analysis seems to suggest that the change in many European restaurants over the last few decades, in which prices were raised to include service and tips became unnecessary, is detrimental, at least from the restaurant's perspective.

Barkan, Erev, Zinger and Tzach (2004) studied the effect of tip policy and visibility on service quality in cafes. Applying social dilemma research to cafes suggests that service quality may be deteriorated by two types of free-riding behavior. These free-riding behaviors include reduced-effort activities and the overuse of limited common resources. The theoretical framework implies that it is difficult to solve both problems simultaneously. An individual tip policy can solve the problem of reduced effort as it motivates each server to work harder for his own tip. However, this policy intensifies the competition between the servers over limited common resources. Shared tip policy operates in the opposite way, solving the latter problem, yet intensifying the former. Similarly, visibility conditions (moderating monitoring and social comparison) affect the two free-riding behaviors in opposite ways. Two field studies indicated that tip policy and visibility were interacting and that quality service could be attained with two

combinations. Individual tip policy leads to quality service when combined with low visibility. Shared tip policy leads to quality service when combined with high visibility. The findings demonstrate the difficulty, but also the potential, of generalizing social dilemma research to natural settings.

Azar (2004b) reviews the early history of tipping and offers an economic analysis of different aspects of tipping. Using the historical evidence, he then addresses two major questions about tipping: why do people tip? And does tipping improve service quality? Azar concludes that the reasons for tipping changed over the years, but conforming to social norms and avoiding embarrassment were generally the main reasons. He suggests that tipping seems to improve service quality, but the extent of the improvement varies across occupations.

Israeli and Barkan (2004) examine the monetary rewards in businesses that combine technical and functional aspects of service. Focusing on the restaurant industry, they develop a framework that explains tipping as a reward for the two service dimensions. They claim that the technical elements of service are rewarded by dollar tip and the functional elements of service are rewarded by percent tip. An overlap between the technical and the functional elements results in a conflict between dollar tip and percent tip and in a magnitude effect. They then test this framework empirically in a sample of restaurants. The findings indicate that customers' evaluation of the service interaction can be summarized by four main components. Multiple regressions provide initial support to the framework, tying the technical elements to dollar tip and functional elements to percent tip.

Azar (2005b) tries to answer the question why has tipping become the norm in certain occupations but not in others. For example, waiters and flight attendants are occupations that have much in common (for example, serving food is a major part of both), and yet tipping

waiters (in the US) is a social norm that almost everyone obeys, while no one tips flight attendants. Similarly, taxi drivers are tipped, but bus drivers are not. What are the reasons, then, for differences in tipping practices among various occupations? Are there some occupation characteristics that are related to the prevalence of tipping? Is tipping created in occupations where it is likely to increase social welfare? This latter question is of particular interest because it relates to an important question in the economic thinking about social norms: are social norms created where they can improve social welfare?[3]

Azar addresses these questions by examining the characteristics of tipped and non-tipped occupations. He created a list of 37 service occupations, some of which are tipped while others are not. Using various books that include information about tipping practices (Schein, Jablonski and Wohlfahrt, 1984; Star, 1988; Post, 1997) he ranked the extent to which each occupation is tipped, based on how prevalent is tipping in that occupation and how much of the worker's income is obtained from tips. In addition, six different judges ranked various characteristics of each occupation. The regression that attempts to explain the extent of tipping in an occupation as a function of the occupation characteristics suggests that tipping prevalence is negatively correlated with the worker's income and the customer's monitoring ability and positively with

[3] Some economists believe that social norms are created because they increase welfare. Arrow (1971, p. 22), for example, wrote, "I want, however, to conclude by calling attention to a less visible form of social action: norms of social behavior, including ethical and moral codes. I suggest as one possible interpretation that they are reactions of society to compensate for market failures." Later Arrow adds, "There is a whole set of customs and norms which might be similarly interpreted as agreements to improve the efficiency of the economic system (in the broad sense of satisfaction of individual values) by providing commodities to which the price system is inapplicable." Others, however, oppose this view, and argue that social norms exist for various reasons, but not because they improve efficiency or welfare (see, for example, Elster, 1989).

the consumer's income and the closeness between the worker and the customer. These results refute a common belief that tipping exists to improve economic efficiency by lowering monitoring costs. Tipping, however, is more prevalent when customers feel empathy and compassion for workers and want to show gratitude for good service, suggesting that tipping might increase welfare if welfare includes not just the standard utility that comes from consumption, but also psychological components of utility.

Azar (2005a) examines whether tipping improves social welfare from another perspective, by introducing a theoretical model of tipping. He presents a model in which a waiter (or any other service provider) chooses service quality and then a customer chooses the tip. People tip mainly because of psychological reasons, rather than because of pure self-interest, as the observation that non-repeated customers also tip suggests. Because tipping is a social norm, people feel unfair and embarrassed if they disobey the norm. Generosity and empathy for the waiter can lead them to tip beyond the norm. To capture these motivations, the customer's utility in the model depends on the social norm about tipping and feelings such as embarrassment and fairness. The equilibrium depends on the exact social norm: higher sensitivity of tips to service quality (according to the norm) yields higher service quality and social welfare. The intuition behind this result is that under the assumption that when service quality improves, tips do not increase by more than the increased utility of the customer (from the improved service), effort in equilibrium is lower than optimal effort. Therefore, any increase in effort is welfare improving, and a higher sensitivity of tips to service quality provides more incentives to the waiter to exert effort and therefore leads to higher service quality and higher social welfare.

Azar (2007d) analyzes the claim that tipping improves service quality and increases economic efficiency because it gives incentives to provide excellent service, and therefore allows

to avoid costly monitoring of workers. He suggests that this common wisdom might be wrong. A simple model shows formally that tips can improve service only if they are sensitive enough to service quality. However, evidence in several previous studies suggests that the actual sensitivity of tips to service quality is very small. Nevertheless, in contradiction to the intuitive prediction (which is also shown in the model) that this should lead to low service quality, rankings of service quality by restaurant customers in various studies were very high. Azar calls this co-existence of low sensitivity of tips to service quality and high service quality "the tipping – service puzzle," and offers several possible explanations for the puzzle.

THE SENSITIVITY OF TIPS TO SERVICE QUALITY

While most of the literature in the area that was denoted above "understanding tipping behavior" is not directly related to the area of "tipping, firm strategy and industrial organization," one aspect of the former literature is crucial for the latter area. This aspect is the sensitivity of tips to service quality. It is crucial because the effect of tipping on the effort that the service provider exerts depends on the incentives he has, which depend on the sensitivity of tips to service quality. The choice of effort by the service provider in turn affects how much the firm should choose to monitor him and provide him with additional incentives for good service, and it affects the service quality and social welfare in equilibrium, all of which are important parts of the literature in the area of tipping, firm strategy, and industrial organization.

Because the relationship between service quality and tips is so important, many studies examined this issue. Bodvarsson and Gibson (1994) collected data from approximately 700 patrons of seven Minnesota restaurants in 1991. Patrons who finished dining were approached

and given a questionnaire about their dining experience. Bodvarsson and Gibson ran a regression of dollar tips on the bill, service quantity (how many dishes and drinks were brought to the table), service quality, and whether the customer is regular (dines at the restaurant at least once a month). The regression results indicate that each additional point on the service quality scale increased tips on average by 12.6 cents (the t-statistic is 1.05).[4] This implies that the monetary rewards for the waiter from increasing quality are very low. The hypothesis that the tip is unrelated to service quality at all cannot be rejected at conventional levels of statistical significance.

Bodvarsson and Gibson (1997) further examine this dataset, adding to the regression a dummy variable for St. Paul restaurants (the other restaurants are from St. Cloud), a dummy for lone diners, and a dummy for whether the restaurant serves alcohol. They find out in various specifications (reported in their Table 4) that another point in the service quality scale increases tips by 6-9 cents, the coefficients being again not statistically significant (t-statistics range between 1.31-1.59). They also add a regression in which tip percentage rather than dollar tip is the dependent variable. A one-point increase in service quality raises tips on average by 0.44-0.54 percent of the bill (in the various specifications reported in their Table 5). In this regression the coefficients become statistically significant (t-statistics range between 2.10-2.75), but notice that the effect of service quality on tips is still negligible. With the sample average of a $28 bill, the approximate 0.5% increase in percentage tip obtained by improving service quality by one point is only 14 more cents.

Conlin, Lynn and O'Donoghue (2003) (henceforth CLO) collected data during 112 surveys sessions conducted outside 39 restaurants in Houston, Texas. A wide variety of restaurants are

[4] Taken from the full sample results with service quantity included in the regression, Table 3 in their article.

included in the sample, including restaurants serving Mexican, Italian, Thai, and American food. In total, 1393 usable responses were collected.[5] The survey was answered by the customers who paid the bill and left the tip. Respondents were asked various questions, including the following one: "Given a 5 point scale with 1 being poor and 5 being excellent, how would you rate the server on:". In the next five lines the respondents had to circle a number between 1 and 5 for each of the following characteristics: appearance, knowledge of menu, friendliness, speed of service, and attentiveness.

CLO report the results of various specifications. Let us consider first the results reported in the first column of Table 3. In a regression where the dependent variable is the percent tip (in percents, i.e. 15% is 15, not 0.15), the coefficients and coefficient standard deviations of the various server attributes (ranked by the customer on a 1-5 scale) were as follows: Appearance: 0.064 (s.d. = 0.469); Knowledge of menu: -0.781 (s.d. = 0.462); Friendliness: 1.336 (s.d. = 0.716); Speed of service: 1.196 (s.d. = 0.462); Attentiveness: -0.475 (0.687). The coefficients of Knowledge and Friendliness are statistically significant at 10-percent level, and Speed of service at 5-percent level. The authors suggest that the negative coefficient of Knowledge of menu may be a result of knowledgeable servers bothering the customer with unimportant information or being perceived as "snob." The effect of the various measures of service quality on tips is positive for only three of the five, and is statistically significant at the 5-percent level for only one, despite the large sample. This shows again that the relationship between service quality and tips is rather weak.

[5] The authors discard certain observations such as tables with more than 5 patrons (because in this case the tip is often included in the bill already) or tables with multiple checks.

CLO then create an aggregate measure of service quality by taking the average of the various server's measures, except for knowledge of menu. A regression that includes this aggregate service quality measure instead of the five different variables (Table 3, second column) reveals that an increase of 1 point in this variable raises percent tip by 1.464 (s.d. = 0.551).[6] While this coefficient is statistically significant at the 5-percent level and much larger than the approximate 0.5% reported in Bodvarsson and Gibson (1997), it is still rather small. It means that if the waiter makes an effort and increases each of the four measures (appearance, friendliness, speed of service and attentiveness) by one point (which is a large increase, given that the variables are on a 1-5 scale and their standard deviation is between 0.71 and 0.94), he is tipped 1.464% (of the bill) more. With average bill being $26.42 and average percentage tip being 17.56%, this means that all this effort increases the waiter's income from tips by less than 39 cents, or about 8% of his tip income (the increase in his total income is even smaller, assuming the waiter has also income from wages, as required by minimum wage laws[7]).

Lynn and Simons (2000) interviewed waiters about their characteristics and examined their tip earnings in lunches and dinners, and found that better service providers can earn higher tips in evenings but not at lunch. Schwer and Daneshvary (2000) examined tipping in beauty salons and found mixed results concerning the relationship between service quality and tips (in some

[6] Notice that the negative coefficient of Knowledge of menu suggests that if the aggregate measure of service quality included also Knowledge of menu in the average computed, the coefficient of the aggregate measure would have been smaller.

[7] The federal law requires employers to pay $5.15 per hour in general. Tipped workers should also have total income (from wages and tips) of at least $5.15 per hour, but their wages can be reduced up to $2.13 an hour, using what is called “tip credit” towards the $5.15 minimum wage. Some states adopted different laws, however (Azar, 2003).

specifications the relationship is positive while in others it is negative), and in all cases the relationship was not significant at the 10% level.

Lynn and McCall (2000a), in a meta-analysis of previous studies on the tipping – service relationship, found statistically significant and positive relationship between service evaluations and tip sizes; the effect of service on tips was small, however, accounting for less than two percents of the variability in tip percentages.[8] In order to support a causality argument, i.e., that customers tip more for good service, the study examines and refutes three alternative explanations for the positive correlation between service quality and tip size. Lynn and McCall also report that tipping was not significantly related to servers' or third-parties' evaluations of the service.

Azar (2007c) stresses the importance of Lynn and McCall's finding that tipping was not related to servers' evaluations of service. This result is very important as it might drive servers to think that tips are not related to the service quality they provide, eliminating their incentive to exert effort and resulting in inefficiency of tipping as an instrument to improve service quality. For tipping to be a welfare-improving social norm, it is required not only that customers tip more for better service, but also that the service providers believe that by making more effort and giving better service they receive higher tips.

Parrett (2003) asked diners who finished eating in a restaurant to rank the service on a 1-7 scale, and then divided the responses to average service (a score of 4), good service (5-7) and bad service (1-3). He finds (Regression 2, Table 15) that compared to average service, good service has a negative but statistically insignificant effect on tips (good service reduces the

[8] They mention, however, that in the studies that used customer ratings of service on multi-item scales (which are more valid and reliable), this number approached 5%.

average tip by 14 cents), and bad service has a larger negative effect (reducing tip by $1.06), which is statistically significant at the 10% level but not at the 5% level.

While Bodvarsson and Gibson (1994; 1997), Lynn and McCall (2000a), Conlin, Lynn, and O'Donoghue (2003) and Parrett (2003) suggest that service affects tips very little, several other studies suggest that service quality is a major determinant of tips. Lynn (2001) reports about a national survey, in which 54.5% of the respondents claimed that the best explanation for why they do or do not tip restaurant waiters had to do with the quality of the service received. No other explanation was near this level of endorsement. This result should be taken cautiously, however, since research shows that people are poor at identifying the causes of their own actions (Lynn, 2001).

Another study that finds a strong relationship between service quality and tips is that of Bodvarsson, Luksetich, and McDermott (2003). They claim that the weak correlation between tip size and service quality in other studies might be the result of simultaneous-equations bias. Since the server can predict the tip to a large extent (see also Barkan and Israeli, 2004) and base the service quality he provides on this prediction, they argue, service quality is not exogenous in a regression that includes the tip as the dependent variable, and consequently one should use 2SLS instead of OLS.[9] Using 2SLS estimation on a sample of 247 diners in a Central Minnesota restaurant, they find a strong relationship between service quality and tip size.

Interestingly, studies that ask people hypothetically how much they will tip for different service quality levels find very large sensitivity of tips to service quality, in contradiction with the results of most surveys conducted after an actual dining experience in a restaurant (as discussed above). Bodvarsson and Gibson (1999), for example, conducted interviews with

[9] See also Lynn (2004) and Bodvarsson (2005) for a debate about the methodology used in this study.

students in two universities.[10] In St. Cloud State University in Minnesota students reported that they would tip 6, 13.1 and 19.1 percent for poor, satisfactory and very good service. In the University of Lethbridge in Alberta the numbers were 3.7, 11.4 and 18.4 percent. Both samples indicate a very large sensitivity of tips to service quality. Rogelberg, Ployhart, Balzer, and Yonker (1999) also found that with hypothetical questions, service quality affected tipping decisions of college students in some cases.

Azar (2006) asked subjects to report how much they would tip for service qualities ranging from 1 to 5. In a sample of 117 undergraduate students at Northwestern University (located near Chicago), average tip percentages reported ranged from 8.8% for service quality of 1 to 24.9% for service quality of 5. In a sample of 238 students in Israel, tips ranged from 6.2% to 21.0% on average for these quality levels. Thus, in both samples, there is a very large sensitivity of tips to service quality. Only 10 out of the 355 subjects reported identical tips regardless of service quality.

Azar (2007c) offers a possible explanation for this discrepancy between the results of experimental studies of real tipping behavior and the results of studies that use hypothetical scenarios. He suggests that people would like to tip according to the service quality. When asked about it hypothetically, they therefore indicate a large sensitivity of tips to service quality. When faced with an actual tipping situation, however, the social pressure and the embarrassment that one feels when he tips poorly bring people to tip for poor service more than they thought they would tip when asked about it hypothetically.

---

[10] I report their results for "dining with a friend and a $20 bill." The results for "dining alone and a $10 bill" are similar.

CONCLUSION

Tipping is a significant economic activity that has many implications for the strategy of firms in the relevant industries. For example, one such implication is the issue of how and to what extent workers who are tipped should be monitored and provided with incentives that depend on performance. Another example is the firm's choice between tipping and a compulsory service charge (which is common in the US for large groups – often 6 diners or more). Also, how does tipping affect the optimal level of investment in screening workers? That is, should firms in tipped industries invest less in screening, with the understanding that the workers who will not perform well will receive low tips and quit, while the best workers will enjoy high tips and stay, so that the firm can save on screening and leave it to the market forces? A similar question applies to the question how tipping affects the optimal level of investment in training workers. In addition, are the tips obtained by each worker a good measure of performance that can be used to determine whom should be promoted?[11]

A recent idea also suggests using tips as a payment mechanism for intellectual property posted on the Internet, in particular music and books (Woodhead, 2000). The idea is that musicians and authors will post on the Internet music and books, and ask consumers who enjoy them to tip. Based on a website that was funded mainly by such tips paid by users, Woodhead believes that people would tip for the use of intellectual property, especially if they tip a person (a musician or an author) and not a corporation. This idea can be extended to other sorts of

[11] Lynn (2001), for example, cites an internal document that announced a servers' contest at Houston Guadalajara Restaurant, which says, "This program will be monitored by your charge tip averages. Tip averages are the most effective way to measure a server's capabilities and progress within the restaurant."

intellectual property, and should be considered, at least as an experiment, by managers in the relevant industries.

Another issue in which firms in tipped industries have to make decisions is whether and how to use tip-out agreements. Such agreements mean that tipped employees share their tips with non-tipped employees. These agreements reduce the wages that the firm has to pay these non-tipped workers (because now their income is also supplemented by tips), creating incentives for the firm to enforce such agreements. On the other hand, it may cause resistance of the tipped workers and reduce their motivation, and it lowers the incentives the tipped workers have to excel. In addition, in the United States firms are limited by law regarding how much they can use tip outs.

A related question the firm has to consider is its policy towards tip pooling, which means the sharing of tips by different tipped workers (e.g., all waiters on a certain shift divide the entire tips collected during the shift among themselves, rather than each waiter receiving the tips in his own tables). The advantage of tip pooling from the firm's perspective is that it encourages cooperation and mutual help between the workers. The disadvantage is that it reduces the incentives of workers to work hard in order to increase their tips, because with tip pooling they do not enjoy the entire increase in tips (due to larger effort and service quality) but only a fraction of this increase. This problem is more severe the more workers are in the tip pooling arrangement.

Some of the issues discussed in this section have been studied before, as the other sections discuss, while others have not and are offered as food for thought and ideas for future research. But even in these topics in which previous literature does exist, the questions are far from being exhausted. I encourage others to join and contribute more to the research on tipping, which I find an important and fascinating research area.

REFERENCES

Arrow, Kenneth J., "Political and Economic Evaluation of Social Effects and Externalities," in M. Intriligator, ed., *Frontiers of Quantitative Economics* (Amsterdam: North-Holland, 1971), 5-25.

Azar, Ofer H. (2003). "The Implications of Tipping for Economics and Management." *International Journal of Social Economics*, 30 (10), 1084-1094.

Azar, Ofer H. (2004a), "What Sustains Social Norms and How They Evolve? The Case of Tipping." *Journal of Economic Behavior and Organization*, 54 (1), 49-64.

Azar, Ofer H. (2004b), "The History of Tipping – from Sixteenth-Century England to United States in the 1910s" *Journal of Socio-Economic*s, 33 (6), 745-764.

Azar, Ofer H. (2004c), "Optimal Monitoring with External Incentives: The Case of Tipping." *Southern Economic Journal*, 71 (1), 170-181.

Azar, Ofer H. (2005a), "The Social Norm of Tipping: Does it Improve Social Welfare?" *Journal of Economics*, 85 (2), 141-173.

Azar, Ofer H. (2005b), "Who Do We Tip and Why? An Empirical Investigation." *Applied Economics*, 37 (16), 1871-1879.

Azar, Ofer H. (2006), "Tipping Motivations and Behavior in the US and Israel: Results of an Experimental Survey." Working paper, Ben-Gurion University of the Negev.

Azar, Ofer H. (2007a), "Do People Tip Strategically, to Improve Future Service? Theory and Evidence," *Canadian Journal of Economics*, 40(2), 515-527.

Azar, Ofer H. (2007b), "Why Pay Extra? Tipping and the Importance of Social Norms and Feelings in Economic Theory." *Journal of Socio-Economics*, 36 (2), 250-265.

Azar, Ofer H. (2007c), "The Social Norm of Tipping: A Review." *Journal of Applied Social Psychology*, 37 (2), 380-402.

Azar, Ofer H. (2007d), "Incentives and Service Quality in the Restaurant Industry: The Tipping – Service Puzzle," *Applied Economics*, forthcoming.

Azar, Ofer H. and Yossi Tobol (2008), "Tipping as a Strategic Investment in Service Quality: An Optimal-Control Analysis of Repeated Interactions in the Service Industry," *Southern Economic Journal*, forthcoming.

Barkan, Rachel, Ido Erev, Einat Zinger and Mayan Tzach (2004), "Tip Policy, Visibility and Quality of Service in Cafes," *Tourism Economics*, 10 (4), 449-462.

Barkan, Rachel and Aviad Israeli (2004), "Testing Servers' Roles as Experts and Managers of Tipping Behaviour," *Service Industries Journal*, 24 (6), 91-108.

Ben-Zion, Uri and Edi Karni (1977), "Tip Payments and the Quality of Service," in O.C. Ashenfelter & W.E. Oates (Eds.), *Essays in Labor Market Analysis*, New York: John Wiley & Sons, pp. 37- 44.

Bodvarsson, Orn (2005), "Restaurant Tips and Service Quality: A Reply to Lynn." *Applied Economics Letters*, 12 (6), 345-346.

Bodvarsson, Orn and William Gibson (1994), "Gratuities and Customer Appraisal of Service: Evidence from Minnesota Restaurants," *Journal of Socio-Economics*, 23(3), 287-302.

Bodvarsson, Orn and William Gibson (1997), "Economics and Restaurant Gratuities: Determining Tip Rates," *American Journal of Economics and Sociology*, 56(2), 187-203.

Bodvarsson, Orn and William Gibson (1999), "An Economic Approach to Tips and Service Quality: Results of a Survey," *The Social Science Journal*, 36(1), 137-147.

Bodvarsson, Orn B., William A. Luksetich and Sherry McDermott (2003), “Why do Diners Tip: Rule of Thumb or valuation of Service?,” *Applied Economics*, 35, 1659-1665.

Conlin, Michael, Michael Lynn and Ted O'Donoghue (2003), "The Norm of Restaurant Tipping," *Journal of Economic Behavior and Organization,* 52, 297-321.

Crusco, April H. and Christopher G. Wetzel (1984), “The Midas Touch: The Effects of Interpersonal Touch on Restaurant Tipping,” *Personality and Social Psychology Bulletin*, 10 (December), 512-517.

Elster, Jon, “Social Norms and Economic Theory,” *Journal of Economic Perspectives* 3 (Fall 1989), 99-117.

Hemenway, David (1993), *Prices & choices: microeconomic vignettes*, 3rd Ed. Lanham, MD: University Press of America.

Hornik, Jacob (1992), “Tactile Stimulation and Consumer Response,” *Journal of Consumer Research*, 19 (December), 449-458.

Israeli, Aviad and Rachel Barkan (2004), “Developing a Framework for Rewards in Combined Production/Service Businesses: The Case of Tipping in the Restaurant Industry,” *International Journal of Service Industry Management*, 15 (5), 444-459.

Jacob, Nancy and Alfred Page (1980), “Production, Information Costs, and Economic Organization: The Buyer Monitoring Case,” *American Economic Review*, 70 (June), 476-478.

Lynn, Michael (1994), “Neuroticism and the Prevalence of Tipping: A Cross-Country Study,” *Personality and Individual Differences*, 17(1), 137-138.

Lynn, Michael (1997), “Tipping Customs and Status Seeking: A Cross-Country Study,” *International Journal of Hospitality Management*, 16(2), 221-224.

Lynn, Michael (2000a), "National Personality and Tipping Customs," *Personality and Individual Differences*, 28, 395-404.

Lynn, Michael (2000b), "National Character and Tipping Customs: The Needs for Achievement, Affiliation, and Power as Predictors of the Prevalence of Tipping," *International Journal of Hospitality Management*, 19, 205-210.

Lynn, Michael (2001), "Restaurant Tipping and Service Quality: A Tenuous Relationship," *Cornell H.R.A. Quarterly*, (January), 14-20.

Lynn, Michael (2004), "Restaurant Tips and Service Quality: A Commentary on Bodvarsson, Luksetich and McDermott (2003)," *Applied Economics Letters*, 11, 975-978.

Lynn, Michael (2006), "Tipping in restaurants and Around the Globe: An Interdisciplinary Review." Ch. 31, pp. 626-643. In Morris Altman (Ed.) Handbook of Contemporary Behavioral Economics: Foundations and Developments, M.E. Sharpe Publishers.

Lynn, Michael and Andrea Grassman (1990), "Restaurant Tipping: An Examination of Three 'Rational Explanations'," *Journal of Economic Psychology*, 11 (June), 169-181.

Lynn, Michael and Kirby Mynier (1993), "Effect of Server Posture on Restaurant Tipping," *Journal of Applied Social Psychology*, 23(8), 678-685.

Lynn, Michael, George M. Zinkhan and Judy Harris (1993), "Consumer Tipping: A Cross-Country Study," *Journal of Consumer Research*, 20 (December), 478-485.

Lynn, Michael, Joseph-Mykal Le, and David S. Sherwyn (1998), "Reach Out and Touch Your Customers," *Cornell H.R.A. Quarterly*, 39 (June), 60-65.

Lynn, Michael and Michael McCall (2000a), "Gratitude and Gratuity: A Meta-Analysis of Research on the Service-Tipping Relationship," *Journal of Socio-Economics*, 29, 203-214.

Lynn, Michael and Michael McCall (2000b), "Beyond Gratitude and Gratuity: A Meta-Analytic Review of the Predictors of Restaurant Tipping," working paper, School of Hotel Administration, Cornell University.

Lynn, Michael and Tony Simons (2000), "Predictors of Male and Female Servers' Average Tip Earnings," *Journal of Applied Social Psychology*, 30, 241-252.

Parrett, Matthew B. (2003), "The Give and Take on Restaurant Tipping," Unpublished doctoral dissertation in Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Post, Peggy (1997), *Emily Post's Etiquette, 16th Edition*. New York: HarperCollins.

Rogelberg, Steven G., Robert Ployhart, William Balzer and Robert Yonker (1999), "Using Policy Capturing to Examine Tipping Decisions," *Journal of Applied Social Psychology*, 29(12), 2567-2590.

Ruffle, Bradley J. (1998), "More Is Better, But Fair Is Fair: Tipping in Dictator and Ultimatum Games," *Games and Economic Behavior*, 23, 247-265.

Ruffle, Bradley J. (1999), "Gift Giving with Emotions," *Journal of Economic Behavior and Organization*, 39, 399-420.

Schein, John E., Edwin F. Jablonski and Barbara R. Wohlfahrt (1984), *The Art of Tipping: Customs and Controvesies*, Wausau, WI: Tippers International.

Schwartz, Zvi (1997), "The Economics of Tipping: Tips, Profits and the Market's Demand-Supply Equilibrium," *Tourism Economics*, 3(3), 265-279.

Schwer, R. Keith and Rennae Daneshvary (2000), "Tipping Participation and Expenditures in Beauty Salons," *Applied Economics*, 32, 2023-2031.

Sisk, David and Edward Gallick (1985), "Tips and Commissions: A Study in Economic Contracting," *Working Paper No. 125*, Bureau of Economics, Federal Trade Commission, Washington, DC.

Star, Nancy (1988), *The International Guide to Tipping*, New York: Berkley Books.

Stephen, Renee and Richard L. Zweigenhaft (1986), "The Effect on Tipping of a Waitress Touching Male and Female Customers," *Journal of Social Psychology*, 126 (February), 141-142.

U.S. Census Bureau (2006), *Statistical Abstract of the United States, 2006 Edition*. Available online at http://www.census.gov/prod/www/statistical-abstract.html.

Wessels, Walter John (1997), "Minimum Wages and Tipped Servers," *Economic Inquiry*, 35, 334-349.

Woodhead, Robert (2000), "Tipping – A Method for Optimizing Compensation for Intellectual Property," Unpublished paper at <http:/tipping.selfpromotion.com/>.