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"I'll Have What He's Having": Group Ordering Behavior in Food Choice Decisions

Brenna Ellison, Ph.D.<br>University of Illinois at Urbana-Champaign<br>1301 W Gregory Dr.<br>Urbana, IL 61801<br>brennae@illinois.edu<br>Jayson Lusk, Ph.D.<br>Oklahoma State University<br>jayson.lusk@okstate.edu

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#### Abstract

: Current research has focused on whether nutrition labeling and pricing policies (i.e., soda taxes) influence food decisions; however, less attention has been given to how peers influence one's food decisions. This study uses sales receipts from a full-service restaurant to take a closer look at how people order in groups. Results of the study revealed people may be less variety-seeking than previous research suggests; in fact, diners were more likely to seek variety when choosing an individual item, but not when choosing a menu category. In other words, diners wanted to be different from their dining companions, but not too different. This result was further confirmed with a model of food choice which shows diners derived more utility from an entrée when a fellow diner ordered an entrée in the same category. Interestingly, the presence of calorie labels on menus did not change the marginal utility of calories, suggesting peer effects may outweigh the effects of nutritional information.


Key Words: food decisions, group ordering behavior, variety-seeking vs. conformism

## Introduction

Consumers and their food decisions have become topics of interest across a wide range of disciplines. In recent years, two of the most widely-cited motivations for studying these food decisions are (1) the increasing proportion of U.S. food dollars spent away from home (see ERS, 2013 for food expenditure statistics) and (2) the rising obesity and overweight rates among children and adults in the U.S. over time (see CDCP, 2012; 2013 for obesity/overweight rates).

Using these two motivations, researchers have examined a number of factors which could influence consumers' food choices, especially choices made outside the home. Most notable are studies on the effects of calorie labeling in restaurants and pricing policies such as "fat taxes/thin subsidies" designed to discourage (encourage) the eating of less healthy (more healthy) options. Interestingly, the results for both areas have been similar in nature: if an effect exists at all, it tends to be small in magnitude (for recent literature reviews on calorie labeling in restaurants, refer to Harnack and French, 2008, and Swartz, Braxton, and Viera, 2011; for the most recent review on food taxes/subsidies, see Powell and Chaloupka, 2009). Additional factors which may affect consumers' food choices and eating behaviors away from home include restaurant atmospherics such as lighting, odor, and music (Wansink, 2004; Stroebele and de Castro, 2004; 2006), food portion sizes (Diliberti et al., 2012; Ello-Martin, Ledikwe, and Rolls, 2005; Rolls et al., 2004; Rolls, Morris, and Roe, 2002; Wansink and Kim, 2005), and "health halos" (Chandon and Wansink, 2007).

A final factor which may be especially important in explaining consumers' food behaviors away from home is the effect of one's peers (i.e., socializing effects). Research has shown that as the number of people one is eating with increases, so too does the meal duration (Bell and Pliner, 2003) and the amount of food consumed (de Castro and Brewer, 1992; Herman,

Roth and Polivy, 2003). In a similar vein, Ariely and Levav (2000) and Quester and Steyer (2009) have studied individual food choices in group settings and their relationship to the overall variety of foods selected at a given table of diners. Ariely and Levav (2000) found individuals in group settings are more variety-seeking (in other words, they ordered differently from other group members) when they were required to audibly announce their food choice (as opposed to writing it down privately); however, Quester and Steyer (2009) dispute this finding and contend there are actually thresholds which dictate whether an individual exhibited variety-seeking behavior or conformed with the group.

While the evidence clearly shows individuals may behave differently in group settings, it has yet to be seen how this behavior will be affected in the presence of nutrition information. In this case, individuals are not only deciding whether or not to order differently from group members (in terms of specific menu items), but they are also deciding whether or not to order differently in terms of nutritional quality. In other words, if the other group members are selecting relatively "healthy" (in this context, lower-calorie) menu options, does the individual feel tempted/pressured to do the same? Beyond considering the presence of calorie labels, this paper also extends the work by Ariely and Levav (2000) and Quester and Steyer (2009) by considering a larger choice set, in which item variation and category variation can be considered. In the previous studies, the choice sets were relatively limited both in size and scope (selecting from four beers/wines, six chocolate bars, a restaurant's drink menu, etc.).

The overall purpose of this paper is to re-examine group ordering behavior in the presence of nutrition information. Using a random utility framework, this paper will be able to identify how peers' food decisions influence an individual's utility from a specific food choice.

## Experimental Design

Daily lunch receipts were collected from a full-service restaurant in Stillwater, OK, during the fall of 2010. The restaurant was located on the Oklahoma State University campus but was open to (and frequented by) the general public. Further, the restaurant had never been used for research purposes, so diners were unlikely to feel that their food choices were being monitored.

The restaurant offered a total of 51 menu items from eight menu categories (soups/salads, burgers/sandwiches, combo meals, pasta, vegetarian dishes, choice steaks, prime steaks, and the daily specials). Across the 51 items, there was a wide range in caloric contents as well as price points. Menu items could contain anywhere from 50 calories (cup of soup) to 1,540 calories (16 ounce New York Strip steak) and cost anywhere from $\$ 3$ (cup of soup) to $\$ 58$ (12 ounce filet mignon). All caloric contents were obtained via The Food Processor nutrition analysis software (for more information, visit http://www.esha.com/foodprosql).

Following the design of Ellison, Lusk, and Davis (2013), diners were randomly assigned to be seated in one of three restaurant sections. Each section was assigned to a particular menu treatment. All menu treatments contained menu item descriptions and prices, but the level of calorie information provided varied. The control menu contained no calorie information essentially the restaurant's conventional menu before the research study. The calorie-only menu treatment was exactly like the control menu with one exception: the number of calories for each menu item was listed in parentheses before the item's price. The final treatment, the calorie+traffic light menu, was similar to the calorie-only treatment in that it also listed the number of calories in parentheses before each item's price; however, in addition to the numeric caloric value, this treatment also displayed a red, yellow, or green "traffic light" symbol for each menu item. The traffic light symbols indicated different caloric ranges: green light items
contained 400 calories or less, yellow light items had between 401 and 800 calories, and red light items consisted of more than 800 calories.

## Model and Data Analysis

Over the 19-week experiment, a total of 1,532 patrons visited the restaurant. Since the purpose of this paper is to study peer influences on individual choice, single-diner tables were removed from our data set, leaving a total of 1,459 observations in our sample.

To determine how "variety-seeking" these diners were, we employ the Variety Index (shown in equation 1) as proposed by Ariely and Levav (2000).

$$
\begin{equation*}
\operatorname{Variety}(V)=\frac{\text { number of different items chosen within a table }-1}{\text { table size }-1} \tag{1}
\end{equation*}
$$

This index ranges from zero to one, where a zero indicates all diners at a table ordered the same menu item and a one indicates all diners at a table ordered different items. In Ariely and Levav's study, diners could choose from 25 menu items. Since there were so many menu items, Ariely and Levav argued the probability of item variety (probability of item uniformity) was high (low), a result they found in both their actual and simulated tables (the average variety index values were 0.952 and 0.925 in the actual and simulated tables, respectively). Given this finding, we would expect the level of item variety in our sample to be even greater since our menu contains double the number of menu items.

While diners may seek variety to show their individualism, the "level" of variety may not be that high. In other words, Diner B could technically be different from Diner A by ordering a bacon cheeseburger rather than the plain cheeseburger, but this deviation is not as varietyseeking, say, as Diner C who opted to order the linguini pasta or Diner D who ordered the grilled shrimp salad. Thus, beyond calculating an item variety index, we also apply equation 1 to
calculate a category variety index. With only eight menu categories (versus 51 menu items), we would most likely expect the level of category variety to be lower; however, it is possible for the vast majority of tables in our sample to exhibit $100 \%$ category variety as only one table had more than eight guests.

To take an even closer look at group ordering behavior, we use a random utility model to explain an individual's main entrée choice. Diner $i$ 's utility from menu item $j$ at table $t$ depends on: (1) the attributes of the menu item itself (such as its price, calorie content, and menu category), (2) the attributes of the menu items selected by the individual's peers at the same table, and (3) a stochastic error term reflecting unobservable individual characteristics. For a diner assigned to menu treatment $m$ ( $m=$ no label, calorie-only label, calorie+traffic light label), the random utility model is shown in equation 2 ; the observed portion of the utility function $\left(V_{i j}^{m}\right)$ shown in equation 3.
(2) $U_{i t j}^{m}=V_{i t j}^{m}+\varepsilon_{i t j}^{m}$
(3) $\quad V_{i t j}^{m}=\alpha_{1}^{m}$ Price $_{i j}+\alpha_{2}^{m}$ Price $_{i j} *$ AvgPrice $_{t}+\beta_{1}^{m}$ Cal $_{j}+\beta_{2}^{m}$ Cal $_{j} *$ AvgCal $_{t}+$

$$
\sum_{k=1}^{7} \gamma_{k} \text { Cat }_{j}+\sum_{n=1}^{7} \delta_{n} \text { Cat }_{j} * \text { AddOrdCat }_{t j}
$$

Equation 3 posits that an individual's utility from an entrée is a function of the menu item's price, $\left(\right.$ Price $\left._{i j}\right)$, the interaction between the item's price and the average number of dollars spent on entrées by other diners at table $t\left(\right.$ Price $_{i j} *$ AvgPrice $\left.e_{t}\right)$, the menu item's caloric contents $\left(C a l_{j}\right)$, the interaction between the item's calories and the average number of entrée calories ordered by other guests at table $t\left(\operatorname{Cal}_{j} * A v g C a l_{t}\right)$, the category to which the menu item belongs (Cat ${ }_{j}$ ) such as burgers, salads, pasta, etc., and the interaction between an item's menu category and the number of additional items ordered within the same menu category at table $t$ $\left(\right.$ Cat $_{j} *$ AddOrdCat $\left._{t j}\right)$.

Based on the social influence and conformity literature (see Cialdini and Goldstein, 2004, for a discussion), we would expect that as the other diners at a table spend more money, on average, individual $i$ will be happier (or at least less unhappy) spending more money as well; thus, we hypothesize $\alpha_{2}^{m}>0$. Likewise, as the other diners at a table select higher calorie items, we would also expect individual $i$ to derive more utility from selecting a higher calorie option (i.e, $\beta_{2}^{m}>0$ ); however, the size of this effect may vary by menu treatment. We hypothesize the size of this effect will be greatest under the control menu treatment where no calorie information is present. Research has shown that people have a natural tendency to underestimate the caloric contents of meals (Chandon and Wansink, 2007), so when tables are confronted with accurate calorie information in the calorie-only and calorie+traffic light menu treatments, the utility derived from calories may be less than the utility derived by tables in the control menu treatment.

Assuming the error terms in equation 2 are distributed iid type I extreme value, the probability of alternative $j$ being chosen from a set of $J$ alternatives is the multinomial logit (MNL) model (McFadden, 1974):

$$
\begin{equation*}
P_{i t j}^{m}=\operatorname{Prob}(\text { option } j \text { is chosen })=\frac{e^{v_{i t j}^{m}}}{\sum_{k=1}^{J} e^{V_{i t k}^{m}}} \tag{4}
\end{equation*}
$$

From the multinomial logit model (MNL), one can calculate the willingness-to-pay for a specific entrée under different scenarios. For instance, the willingness-to-pay for a pasta entrée over the daily special could be calculated as shown in equation 5:
(5) $\quad W T P_{p a s t a}=\frac{\beta_{1}^{m} \text { Cal }_{\text {pasta }}+\beta_{2}^{m} \text { Cal }_{\text {pasta }} * \text { AvgCal }_{t}+\gamma_{\text {pasta }}+\delta_{\text {pasta }} * \text { AddOrdCat }_{\text {tpasta }}}{\alpha_{1}^{m}+\alpha_{2}^{m} * \text { AvgPrice }}{ }_{t}$

Thus, an individual's willingness-to-pay not only depends on the characteristics of the pasta itself (such as calories) but also on the characteristics of the other items ordered by the individual's dining companions.

## Results

Daily lunch receipts were collected over a 19-week period in a full-service restaurant. In aggregate, there were 1,532 observations. However, since this study focused on group ordering behaviors, single-diner tables were removed from the sample, leaving 1,459 observations for analysis.

## Variety Indices

Past literature has suggested people are often variety-seeking in a restaurant setting, particularly when meal choices must be expressed audibly (as opposed to writing down one's order). Ariely and Levav (2000) contend each diner will select a different entrée from his/her dining companions in an effort to display his/her uniqueness or individualism. Similarly, Quester and Steyer (2009) also found diners exhibit variety-seeking behaviors, but there are threshold levels where instead of seeking variety, diners decide to conform to the group.

Following these studies, we first calculated a variety index (V) using equation 1. We considered two variety indices: one index for individual items and a second index for menu categories (burgers, salads, pasta, etc.). Recall diners had 51 menu items to choose from, and these items were classified into eight menu categories.

Table 1 reveals the average item variety across all menu treatments was 0.701 (there was no significant difference between the three menu treatments). Clearly, this level of variety leans more toward variety-seeking than conformism, but it is surprisingly lower than 0.952 item variety value found by Ariely and Levav (2000). One explanation for this result may be that diners were faced with too many choices at this restaurant, such that conforming to a fellow
diner's choice may have been more appealing than studying all 51 menu items to find one that best displays the diner's individuality.

In terms of category variety, the average level across all treatments was 0.443 ; however, the calorie+traffic light menu treatment exhibited significantly more category variety ( 0.497 ; pvalue $<0.01$ ) than the calorie-only and control menu treatments ( 0.412 and 0.409 , respectively). Regardless of menu treatment, it is important to note that the category variety levels are much lower than the item variety levels. This suggests that diners may deviate from their fellow diners, but the deviation is unlikely to be far. In other words, if Diner X orders a Mushroom Swiss Burger, Diner Y may order the Bleu Cheese Burger to be different. While Diner Y's decision exhibits item variety, there is no category as she opted to stay within the "burger" section of the menu. Thus, we conclude that diners do want to show their individuality, but this is more likely to occur through small menu item deviations rather than full category deviations.

We also consider the levels of item and category variety by party size. As can be seen in table 2, the vast majority of tables in our study (96.4\%) had five or fewer guests. Looking at the item variety values, one can see the average item variety decreases as a function of party size until party size reaches six diners. At tables with more than six guests, the item variety level increases back to levels greater than 0.7 ; these results lend support to Quester and Steyer's (2009) contention that there are thresholds (in our case, number of guests at a table) for varietyseeking behavior. However, results from the larger tables should be interpreted cautiously as only five tables (1\%) in our entire sample had more than six guests. Table 2 also reveals category variety levels were again lower than item variety levels, yet there was no clear pattern between category variety and party size.

## MNL Model of Food Choice

Beyond variety indices, we further examine the influence of peers by considering how peers' food choices affect the utility an individual receives from his/her food choice. Table 3 presents the multinomial logit (MNL) estimates for each menu treatment as specified in equation 3 (a likelihood ratio test reveals the data cannot be pooled across menu treatments).

Our first observation from table 3 is that, all else held constant, an individual's utility from an entrée decreased as the entrée's price increased. This holds for both the calorie+traffic light and control menu conditions (the price coefficient for the calorie-only menu treatment was not significantly different from zero). However, table 3 also reveals for the calorie+traffic light and control treatments that as the other diners at a table spent more, an individual's marginal utility of price was actually significantly positive ( 0.0033 and 0.0026 for the calorie+traffic light and control treatments, respectively); thus, $\alpha_{2}^{m}>0$ as hypothesized. This result suggests people are happier spending more money as long as their friends are.

Similar to price, individuals across all menu treatments exhibited a negative relationship between utility and calories such that the more calories an entrée contained, the less happy an individual was. As was the case with price, however, individuals had a positive marginal utility of calories when their fellow diners ordered higher-calorie items. Surprisingly, the calorie coefficients (both the linear and interaction terms) were quite similar in magnitude across menu treatments.

Turning to the food category variables, table 3 shows that, on average, diners derive less utility from salads, pasta, and vegetarian entrées compared to the daily special (in this restaurant, the daily special was a "surf-and-turf" combination plate averaging 450 calories). In contrast, diners had a positive marginal utility for burgers and combo meals relative to the daily special.

Most notable, though, are the coefficients for the categorical interaction terms. Virtually every interaction term across every menu treatment was significantly positive (the only exception was the interaction term for prime steaks under the calorie+traffic light menu, yet this coefficient was statistically insignificant). This means that as more diners at your table order from the same category as you, your utility for your entrée increases, a result which seems to contradict the conclusion of Ariely and Levav (2000) that individuals are variety-seeking in a group setting. Here, individuals may choose a different item (and thus, exhibit item variety), but they derive much more utility from their item choice when their fellow dining companions order from the same menu category (thus, little to no category variety).

Figures 1a and 1b display how the marginal utilities of salads and vegetarian entrées change with the number of additional salads and vegetarian items ordered at a table. In the case of salads (figure 1a), if no additional salads are ordered, the marginal utility is negative across all menu formats. As each additional salad is ordered, however, the original negative marginal utility is somewhat offset. In fact, when two or more additional salads are ordered in the calorieonly menu treatment, the marginal utility of salad actually becomes positive (similarly, this occurs in the calorie+traffic light treatment when three or more salads are ordered). Figure 1 b reveals a similar trend for vegetarian entrées. In this case, though, the original negative marginal utility can be completely offset by just one additional diner ordering a vegetarian entrée in the calorie+traffic light and calorie-only treatments. These figures offer further evidence conformism is at least somewhat desirable at the categorical level.

Using the model estimates, one can also calculate how an individual's willingness-to-pay (WTP) for an item changes as the group's ordering behavior changes. For instance, figure $2^{1}$

[^0]considers an individual's WTP for a 550 calorie pasta dish (over the daily special) as the number of additional pastas ordered at the table changes (average table price and average table calories are held constant at the sample means of $\$ 11.14$ and 610 calories, respectively). WTP can be calculated for the calorie+traffic light menu treatment by filling in the appropriate values in equation 5: WTP $P^{\text {Cal+traffic light }}=$
$-\frac{-0.9922+(0.8906 * \text { Addl Salads Ordered })+(-0.0030 * 550)+(0.000004 * 550 * 610)}{-0.1035+(0.0033 * \$ 11.14)}$.
As figure 2 shows, when zero additional pastas are ordered, the WTP under both the calorie+traffic light and control treatments are actually negative. This means someone would have to pay the individual to order the 550 calorie pasta entrée instead of the daily special, which is not surprising given the negative marginal utility of pasta. Note when two additional pastas are ordered, though, that the WTP becomes positive, such that an individual is willing to pay $\$ 7.21$ and $\$ 5.86$ under the calorie+traffic light and control treatments, respectively.

Figure 3, on the other hand, considers the WTP for a 1,000 calorie combo meal (over the daily special) as the average table calories change (average table price is again held constant at $\$ 11.14$ and the additional combos ordered is held constant at zero). From the figure, it is clear that a diner is not willing to pay much for this combination when his fellow diners are eating a relatively small (in this case, $50 \%$ fewer) number of calories; in fact, the diner would have to be paid a little over $\$ 4.00$ to order this combo meal instead of the daily special when his peers ordered an average of 500 calories. As the number of table calories increases, so too does the diner's WTP for the 1,000 calorie combo. Note that in both figures 2 and 3, the range of WTP

[^1]values is wider for the control menu - this is due to the smaller absolute magnitude of the price coefficient in the control menu model specification.

## Conclusion

Americans' food decisions have been met with increased scrutiny in recent years. Indeed, policymakers, medical professionals, and academics alike have dedicated their time, effort, and research programs to better understand (1) what influences consumers' food decisions and (2) how consumers can be "nudged" to make better food decisions (i.e., Thaler and Sunstein, 2008). Proposed solutions (or "nudges") have primarily focused on better informing consumers about food choices (via calorie labels in restaurants, for example) and either taxing (or subsidizing) foods of lower (higher) nutritional quality.

Though these groups may be able to influence the level of information provided to consumers or food prices, one aspect of the food decision process they have little control over is the effect of one's peers on food choices. Past research has shown that, in general, diners are more variety-seeking when they are in groups in an effort to preserve their individualism (Ariely and Levav, 2000), but there are thresholds/conditions where diners may instead prefer to conform to the group (Quester and Steyer, 2009). In this study, we re-examine group ordering behavior to: (1) consider variety-seeking behavior at both the menu item and menu category levels and (2) determine how an individual's utility (from his/her food choice) is affected by the food choices of his dining companions.

Data was collected from a full-service restaurant in the fall of 2010. The restaurant offered a total of 51 menu items from eight distinct menu categories. Recall diners were assigned to one of three menu treatments: the calorie+traffic light menu, the calorie-only menu, or the
control menu with no calorie information. In total, there were 1,459 observations (526 tables) across the three treatments.

A key finding of this study was that item variety was not nearly as high as in previous studies (average item variety was 0.701 in our study and 0.952 in the Ariely and Levav (2000) study). Further, category variety was much lower than item variety, even though both could be the same for the vast majority of our sample. This result suggests people are somewhat varietyseeking in their menu item choice, but not so much in their menu category choice. Thus, it would appear diners want to be different from their peers but not too different.

This finding was further substantiated through our food choice model, which shows that, regardless of the (dis)utility derived from a specific menu category, diners will be happier with their choice if a fellow diner orders an entrée from the same category. In other words, even though a vegetarian entrée may not make Diner A very happy (relative to the daily special, in this study), if Diner B also orders a vegetarian entrée, this could completely offset Diner A's disutility. In a similar vein, we found, on average, people are happier spending money and eating more calories as long as their peers are, results congruent with much of the social influence and conformity literature.

A final interesting result of this study was the marginal utility of calories was virtually the same across all three menu treatments. Studies have shown traffic light symbols (Ellison, Lusk, and Davis, 2013; Thorndike et al., 2012) and calorie labels (Wisdom, Downs, and Loewenstein, 2010; Yamamoto et al., 2005; Balfour et al., 1996) can influence food choices and lower caloric intake, leading one to expect the marginal utility of calories to be less for menu treatments providing calorie information. However, this is not what we observed. Rather, our results suggest when peer effects are accounted for, the labeling/information effects weaken.

With this in mind, one is left to question whether policy initiatives should aim to "nudge" people toward healthier food choices or toward healthier peers?


Figure 1a. Marginal utility of salads based on the number of additional salads ordered at a table


Figure 1b. Marginal utility of vegetarian entrées based on the number of additional vegetarian entrées ordered at a table


Figure 2. Willingness-to-Pay for a 550 calorie pasta entrée over the daily special based on the number of additional pastas ordered at a table (Average table price $=\mathbf{\$ 1 1 . 1 4 ;}$ Average table calories = 610)


Figure 3. Willingness-to-Pay for a 1,000 calorie combo meal over the daily special based on average table calories ordered (Average table price $=\mathbf{\$ 1 1 . 1 4}$; Additional combos ordered $=0$ )

Table 1. Variety Indices by Menu Type

| Menu Type | Mean Item Variety | Mean Category Variety** |
| :--- | :---: | :---: |
| Calorie+traffic light menu | 0.711 | 0.497 |
| Calorie-only menu | 0.698 | 0.412 |
| Control menu | 0.691 | 0.409 |
| Pooled (All treatments) | 0.701 | 0.443 |

**Denotes mean category variety index values were significantly different (at the $1 \%$ level) across the three menu treatments.

Table 2. Variety Indices by Party Size

| Guests per Table | Number of Tables | Mean Item <br> Variety** | Mean Category <br> Variety** |
| :--- | :---: | :---: | :---: |
| 2 guests | 302 | 0.745 | 0.533 |
| 3 guests | 120 | 0.704 | 0.429 |
| 4 guests | 53 | 0.654 | 0.321 |
| 5 guests | 32 | 0.648 | 0.344 |
| 6 guests | 14 | 0.571 | 0.343 |
| 7 guests | 3 | 0.722 | 0.556 |
| 8 guests | 1 | 0.714 | 0.423 |
| 10 guests | 1 | 0.778 | 0.333 |
| Pooled (All tables) | 526 | 0.701 | 0.443 |
| **Denotes mean item and mean category variety index values were significantly different (at the $1 \%$ level) across |  |  |  |
| the different party sizes. |  |  |  |

Table 3. MNL Models of Food Choice by Menu Treatment

|  | Calorie + traffic light menu | Calorie-only тепи | Control тепи |
| :---: | :---: | :---: | :---: |
| Parameter | Estimate | Estimate | Estimate |
| Price | -0.1035*** | 0.0067 | -0.0875*** |
|  | (0.0267) | (0.0285) | (0.0271) |
| Price*Avg Table Price | 0.0033*** |  | 0.0026*** |
|  | (0.0012) | (0.0011) | (0.0010) |
| Calorie | -0.0030*** | $-0.0031 * * *$ | -0.0033*** |
|  | (0.0005) | (0.0005) | (0.0006) |
| Calorie*Avg Table Calorie | 0.000004*** | 0.000004*** | 0.000005*** |
|  | (0.0000) | (0.0000) | (0.0000) |
| Salad ${ }^{\text {a }}$ | $-2.0848^{* * *}$ | -1.6075*** | $-2.2439 * * *$ |
|  | (0.2554) | (0.2983) | (0.3069) |
| Salad*Additional Table Salads | 0.9235*** | 1.0001*** | 0.6344** |
|  | (0.2866) | (0.3063) | (0.3077) |
| Burger ${ }^{\text {a }}$ | 0.1928 | 0.5498** | 0.2391 |
|  | (0.2086) | (0.2363) | (0.2330) |
| Burger*Additional Table Burgers | 0.4872*** | 0.5295*** | 0.2568*** |
|  | (0.1409) | (0.0935) | (0.0816) |
| Combo ${ }^{\text {a }}$ | 0.7176*** | 1.4284*** | 0.5406** |
|  | (0.2170) | (0.2356) | (0.2449) |
| Combo*Additional Table Combos | 1.6400*** | 0.7494*** | 0.8691*** |
|  | (0.2178) | (0.1740) | (0.1181) |
| Pasta ${ }^{\text {a }}$ | $-0.9922^{* * *}$ | $-0.6527^{* *}$ | -1.3018*** |
|  | (0.2311) | (0.2686) | (0.2854) |
| Pasta*Additional Table Pastas | 0.8906*** | 0.8254*** | 0.8911*** |
|  | (0.2679) | (0.2928) | (0.3058) |
| Veggie ${ }^{\text {a }}$ | -1.1346*** | -0.5590* | $-1.2237^{* * *}$ |
|  | (0.2848) | (0.3071) | (0.3317) |
| Veggie*Additional Table Veggies | 1.2136** | 1.0770*** | 0.9002*** |
|  | (0.5549) | (0.3083) | (0.2532) |
| Choice Steak ${ }^{\text {a }}$ | -0.1929 | -1.0595*** | -0.4226 |
|  | (0.2333) | (0.3270) | (0.2735) |
| Choice Steak*Additional Table Choice Stks | 1.6984*** | 1.7548*** | 1.0080*** |
|  | (0.2281) | (0.2868) | (0.1660) |
| Prime Steak ${ }^{\text {a }}$ | -0.1593 | -3.3563*** | -0.6610 |
|  | (0.6157) | (0.8687) | (0.6599) |
| Prime Steak*Additional Table Prime Stks | -0.5373 | 2.9841** | 0.7003* |
|  | (1.2279) | (1.1668) | (0.3923) |
| Number of Observations | 552 | 454 | 453 |

Note: Standard errors are in parentheses
*, ${ }^{* *}$, and ${ }^{* * *}$ denote significance at the $10 \%, 5 \%$, and $1 \%$ levels, respectively
${ }^{\text {a }}$ All menu categories effects are relative to the daily special

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[^0]:    ${ }^{1}$ Note that figures 2 and 3 only consider willingness-to-pay (WTP) values under the calorie+traffic light and control menu treatments as these are the treatments which had significant price coefficients. If the price coefficient is not

[^1]:    significantly different from zero (as is the case in the calorie-only treatment), there is little interpretive value to such calculations.

