Title Page

Title:
Planning for Multiple Shopping Goals in the Marketplace

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The research data and SAS code are available from the corresponding author upon request.
Planning for Multiple Shopping Goals in the Marketplace

Four online grocery-shopping experiments and one field study using video-tracking technology at a grocery store document how shoppers’ motivation evolves from the beginning to the end of their shopping trips. We uncover unique motivational patterns as shoppers achieve multiple sub-goals (i.e., choose multiple grocery items) to complete their trips: a monotonic decrease in motivation for shoppers with a shopping list, versus a curvilinear trend (i.e., decrease then increase) in motivation for shoppers without a list. In addition, we demonstrate how to reverse the observed patterns for shoppers with a list by changing their reference points for tracking progress. The discovery of the moderating role of shopping-list usage adds to the bubbling dialogue in goal pursuit and shopper psychology research concerning how consumer motivation follows either a monotonic trend (e.g., a goal gradient effect) or a nonmonotonic trend (e.g., the stuck-in-the-middle effect). Importantly, we demonstrate how the stuck-in-the-middle theory, which applies to single-goal pursuits, can apply more broadly to the domain of grocery shopping, which consists of the generation and completion of multiple sub-goals.
An average consumer makes two grocery-shopping trips per week (FMI, 2018), amounting to over $600 billion of sales in the United States alone (US Census Bureau, 2016). The growth and scale of the retail industry makes studying shopper behavior increasingly important (Kahn, 2018). However, a critical limitation of extant studies is the assumption that shopper motivation remains constant over the course of a shopping trip, and accordingly, that collecting data at one time point is sufficient (a concern highlighted by Sheehan & Van Ittersum, 2018). This research gap is notable because studies in consumer psychology have brought to light the behavioral and motivational dynamics that could occur over a series of sequential choices and time points (Dhar, Huber, & Khan, 2007; Fishbach & Dhar, 2005; Huang & Zhang, 2011; Khan & Dhar, 2006).

We draw from these frameworks and adopt a sequential, dynamic approach to obtain a richer and more comprehensive understanding of shopper motivation in the marketplace (Lemon & Verhoef, 2016; MSI, 2018). One field study and two online experiments (plus two replication studies) tracked consumers’ motivation to complete multiple sub-goals (i.e., choices of various grocery items) in their shopping trips, and uncovered unique motivational patterns: a monotonic decrease in motivation for shoppers with a shopping list, versus a curvilinear (i.e., decrease then increase) trend in motivation for shoppers without a list. Hence, this research offers the following three contributions to the understanding of consumer psychology: First, we theorize and examine shopper motivation in a continuous manner, instead of making inferences based on behaviors measured at specific time points. Our novel methodologies allowed temporal dynamics to emerge in a natural setting. Second, we add to the growing research on shopper psychology and behavior-tracking technology (e.g., Grewal, Ahlborn, Beitelispacher, Noble, & Nordfält, 2018; Stilley, Inman, & Wakefield, 2010; Van Ittersum, Wansink, Pennings, & Sheehan, 2013; Zhang,
by drawing attention to one important element of in-store behavior—shopping-list usage—and demonstrating its divergent impact on motivation in the store. Third, our findings add to the dialogue around the notion that consumer motivation can follow both a monotonic trend (e.g., a goal gradient effect; Hull, 1932; Kivetz, Urminsky, & Zheng, 2006) and a nonmonotonic trend (e.g., the stuck-in-the-middle effect; Bonezzi, Brendl, & De Angelis, 2011; Huang, 2018). Importantly, we demonstrate how the stuck-in-the-middle theory that focused on single goal pursuits can apply more broadly to unique consumer domains with multiple sub-goals.

**Theoretical Background**

Consumer goal pursuit often evolves in a dynamic manner through a series of actions and across multiple time points (Dhar et al., 2007; Fishbach, Zhang, & Koo, 2009; Huang & Zhang, 2011; Khan & Dhar, 2006). For example, shoppers’ goals tend to become less exploratory and more concrete as a trip progresses (Hui, Bradlow, & Fader, 2009; Lee & Ariely, 2006; Seiler & Pinna, 2017). In addition to the temporal dynamics, goals can also have a hierarchical structure, such that people complete sub-goals in order to achieve an overarching, high-order goal (Kruglanski et al., 2002; Huang, Jin, & Zhang, 2017). Studying in-store behaviors in a temporally continuous manner and exploring shopping goals that expand different levels of hierarchies, therefore, is imperative to understanding how consumer motivation evolves in the marketplace.

In this research, we concentrate on grocery shopping as the focal domain, in which consumers have an overarching goal—to complete the shopping trip—that comprises multiple sub-goals consisting of specific items that consumers might purchase (e.g., to get the milk, eggs, produce, and snacks). Consumers work to achieve these sub-goals in order to satisfy the
overarching goal of completing the trip. Accordingly, a critical facet of motivation in this environment is the amount of time consumers spend between sequential product choices (i.e., progressing from one fulfilled sub-goal to the next) within a shopping trip. The more motivated a consumer is to complete a shopping trip, the faster s/he would move (either physically, in person, or virtually, by clicking through options in an online grocery store) from one product choice to another, so that the overarching goal of completing the shopping trip can be achieved in a timely manner. We refer to this measure as inter-choice time.

Inter-choice time as a proxy for consumer motivation has wide usage and rich antecedents in shopper psychology and goal pursuit research. Previous research uses sequential product choices and purchases as key indicators of consumer motivation, such that a reduction in inter-choice time reflects an increase in motivation (Gupta, 1988; Kivetz et al., 2006; Liu, 2007). While some studies focus on inter-choice time between separate shopping occasions, our research and other extant studies focus on inter-choice time within a shopping occasion (e.g., clickstream data; Moe, 2003; Park & Park, 2016). In particular, evidence abounds establishing that the time between the sequential activities that together constitute a task is an indicator of motivation, such that less time spent reflects a higher motivation to complete the task (Custers & Aarts, 2005; Touré-Tillery & Fishbach, 2012; Wiebenga & Fennis, 2014). In practice, retailers use the time between two product selections as a key measure for strategic analyses; a decrease in inter-choice time signals when a shopper speeds up to complete the trip and leave the store (Hui et al., 2009), and is directly proportional to total store sales (Sorensen, 2009).

To validate inter-choice time as a proxy for shopper motivation, we conducted two pilot studies that consistently revealed an inverse relationship between motivation to complete a shopping trip and inter-choice time: The higher the motivation to complete a shopping trip, the
faster the participants would advance from one product choice to the next. Web Appendices A-B report these two pilot studies. We also recognize that there are other shopping contexts in which spending more time could be considered as exhibiting higher motivation (e.g., to deliberate on a gift for a significant other). We discuss these possibilities in the General Discussion, and encourage future research to explore other types of shopping goals and appropriate behavioral proxies for these goals.

The Driving Role of Shopping-List Usage

In addition to tracking shoppers’ inter-choice time in a continuous manner throughout their trips, we incorporated a theoretically and managerially relevant antecedent into our framework—shopping-list usage—which may affect how shoppers track their progress to complete their shopping goals. Prior research suggests that a shopping list (i.e., a physical cue of the intended items to purchase) acts as an external memory aid that consumers can use to monitor the progress of their shopping (Block & Morwitz, 1999). We theorize that shopping-list usage sets multiple sub-goals that alter shoppers’ focus when tracking their progress in the store, consequently influencing the motivational patterns that emerge during a shopping trip, even when the overall goal remains the same.

Specifically, we propose that consumers without a shopping list will not have a predetermined goal structure consisting of multiple, specific sub-goals (Bell, Corsten, & Knox, 2011; Stern, 1962); instead, they organically generate, abandon, and achieve sub-goals as they go (Gilbert, Gill, & Wilson, 2002). Therefore, when tracking progress during a shopping trip, these no-list shoppers would mainly refer to two static, fixed states as their reference points—the initial state (i.e., zero purchases) and the end state (i.e., a completed shopping trip). Prior literature in single-goal-pursuit domains has shown that people exhibit a natural switch in
reference points from the initial state to the end state as they advance toward the goal (Bullard & Manchanda, 2017; Koo & Fishbach, 2008). Importantly, because the marginal value of progress is the greatest when near a reference point (Heath, Larrick, & Wu, 1999), these shoppers should perceive their first few decisions/purchases and their last few decisions/purchases to be the most valuable. The natural switch between the two reference points thus results in a curvilinear pattern where motivation drops to its lowest in the middle of the trip, similar to the patterns documented in single-goal-pursuit contexts (Bonezzi et al., 2011; Huang, 2018; Touré-Tillery & Fishbach, 2011; Wiebenga & Fennis, 2014). Accordingly, we hypothesize that shoppers without a list (i.e., no-list shoppers) would show the longest inter-choice time in the middle of their shopping trips.

In contrast, shopping-list usage provides a consumer with a goal structure that delineates not only an overarching goal but also multiple sub-goals of specific items to purchase (Block & Morwitz, 1999; Huang & Yang, 2018). Because these consumers would focus on completing each specific sub-goal (i.e., crossing each item off their shopping list), we conjecture that they would naturally adopt a to-date frame, referencing progress by counting the number of sub-goals they have completed so far on the list (Koo & Fishbach, 2008). If so, and following the same rationale that the perceived marginal value of progress is the greatest when near a reference point (in this case, the initial state), shopping with a list would lead to a monotonic decrease in motivation throughout the shopping trip. Interestingly, the opposite motivation pattern could emerge if list shoppers adopt a to-go frame by counting the remaining items on their lists instead of focusing on the fulfilled ones, leading to the highest motivation at the end of the trip (i.e., a goal gradient effect; Hull, 1932). While we propose that this is not how list shoppers would naturally behave, we empirically tested this possibility in study 3 by externally manipulating how
people referenced their shopping lists. Figure 1 illustrates possible motivation patterns for shoppers following a to-date frame, a to-go frame, or no-frame (e.g., without a shopping list).

**The Present Research**

We conducted a field study (study 1) at a grocery store to document the proposed patterns, and then replicated the observed patterns in study 2 (plus two replication studies) by manipulating shopping-list usage in an online retail environment. Study 3 investigates whether shopping lists provide reference points by testing whether a list that focuses on remaining purchases (i.e., to-go frame) as opposed to completed purchases (i.e., to-date frame) reverses the motivation pattern of list shoppers.

**Study 1: Tracking Motivation in a Grocery Store**

**Method**

Two hundred fifty shoppers at a grocery store participated in a research study in exchange for a $5 store gift certificate. Participants first indicated whether they were using a list and then began shopping as normal with a head-mounted video camera (see Appendix A; Hui, Huang, Suher, & Inman, 2013). After checking out, participants returned the camera and provided their receipts. Trained technicians coded each video for the timings and categories of all product choices. Web Appendix C includes a comparison with non-camera shoppers to assess the impact of our method.

The dependent variable was the amount of time leading to each product choice (i.e., inter-choice time). We calculated inter-choice time as the time from when a shopper entered the store to the first product choice, then the time from the first choice to the second, and so on. As a proxy for trip progress, we created a trip-completion percentage measure by dividing the time spent from the beginning of the trip to each product choice by the total duration of the trip—
product choices made earlier during the trip would reflect early trip progress (i.e., 0–50%), whereas those made closer to the end of the trip reflect advanced trip progress (i.e., 50–100%). Finally, we regressed inter-choice time on 1) trip progress (i.e., the completion percentage measure), 2) the square of trip progress, 3) a contrast code for shopping-list usage (List = 1; No-List = −1), and 4) the two-way interactions between the list code and trip progress, and the list code and squared trip progress, with total purchase count as a covariate. The regression model had a log-link and included fixed effects for participants and product categories. The trip progress variables were mean-centered. The final data set consisted of 2,285 inter-choice times from 237 shoppers of whom 37% carried a shopping list (13 video files were unusable). See Appendix B for descriptive statistics comparing list and no-list shoppers; the Methodological Data Appendix includes additional information for all studies. We also tested different proxies of trip progress as additional robustness checks: (1) the raw accumulated time from the beginning of the trip to a purchase decision, and (2) the number of displays considered from the beginning of the trip to a purchase decision. These analyses revealed consistent results as using the completion percentage measure of trip progress and Web Appendices D-E summarize the analyses.

**Results**

As expected, there was a positive interaction between squared trip progress and the list code (β = 0.9993, Wald $\chi^2(1959) = 9.40, p < .01$). We used spotlight analysis to decompose the results within the list and no-list conditions (Spiller, Fitzsimons, Lynch, & McClelland, 2013). In the list condition, there was a positive effect of trip progress (β = 0.8800, Wald $\chi^2(1959) = 35.49, p < .0001$); the quadratic effect of trip progress was not significant (β = −0.550, Wald $\chi^2(1959) = 1.24, p = .27$). In the no-list condition, in contrast, there was a negative quadratic effect of trip
progress ($\beta = -2.5536$, Wald $\chi^2(1959) = 30.36$, $p < .0001$); the effect of trip progress was
positive ($\beta = 0.7040$, Wald $\chi^2(1959) = 33.54$, $p < .0001$). Floodlight analysis within the no-list
condition supports the expected curvilinear motivation pattern; trip progress was nonsignificant
between 59% and 73% of the trip ($\beta = 0.2443$, Wald $\chi^2(1959) = 2.61$, $p = .1063$; $\beta = -0.4707$,
Wald $\chi^2(1959) = 3.51$, $p = .06$) and was negative at 74% or greater ($\beta = -0.5217$, Wald $\chi^2(1959)$
= 4.04, $p = .04$). Figure 2 illustrates the results.

Discussion

While consumers who shopped with a list exhibited a monotonic increase in inter-choice
time (i.e., a decrease in motivation), consumers without a list exhibited a curvilinear pattern,
reaching the lowest motivation (i.e., the longest inter-choice time) in the middle. Building on this
field evidence, study 2 manipulated list usage in an online store to further enhance the internal
validity of our findings, and rule out individual difference of list usage as an alternative account.

Study 2: Simulated Shopping in an Online Store

Method

We recruited 250 undergraduate students to participate in a research study for course
credit. Participants received instructions to complete a shopping trip in a simulated online
grocery store using a tablet computer. The study randomly assigned participants to one of two
shopping-list conditions, list versus no-list. In the list condition, we informed participants of the
product categories in the store, provided them with a budget of $35, and asked them to create a
list of four or more items ($M_{items} = 5.20$). In the no-list condition, we informed participants of the
same categories and budget but did not ask them to create a list. In both conditions, participants
had a clear overarching goal of completing a grocery-shopping trip. To ensure incentive-
compatibility, we entered participants into a drawing to receive their grocery purchases.
Participants could browse through 15 product categories to add items to their cart at their own pace, or pause, go back, and revisit prior categories, as well as advance or skip forward, just as in regular online shopping. Each product category contained six popular items from a national US grocery retailer (Kroger; see Appendix C). The list condition displayed the list items on the screen, and all participants saw their total spending updated on each page. Upon their navigating past the final category, the store allowed participants to check out or return to the store regardless of total spending. After checkout, an exit survey collected demographic information. We followed the same procedure as in study 1 to create the regression model with the trip-completion percentage measure as trip progress; the results again remained consistent with alternative trip-progress proxies such as the raw accumulated trip time and the number of web pages visited in the shopping trip. The final sample included 1,835 inter-choice times from 250 participants. On average, the list shoppers spent 186 seconds to select 7.36 items totaling $30.76 and the no-list shoppers spent 207 seconds to select 8.47 items totaling $33.96.

**Results**

The motivational patterns between list and no-list shoppers diverged in a manner consistent with that in the field study. We again observed an interaction between squared trip progress and the list contrast code \( \beta = 0.6301, \text{Wald } \chi^2(1567) = 14.05, p = .0002 \). In the list condition, there was again a positive effect of trip progress \( \beta = 0.4755, \text{Wald } \chi^2(1567) = 13.75, p = .0002 \), while the quadratic effect of trip progress was not significant \( \beta = -0.2079, \text{Wald } \chi^2(1567) = 0.31, p = .58 \). In the no-list condition, we again observed a negative quadratic effect of trip progress \( \beta = -1.4681, \text{Wald } \chi^2(1567) = 17.42, p < .0001 \), while trip progress was not significant \( \beta = 0.0472, \text{Wald } \chi^2(1567) = 0.15, p = .70 \). Figure 3 illustrates the results.

**Discussion**
Consistent with the results of the field study, the motivational patterns in the online grocery store differed based on shopping-list usage. Whereas shoppers with a list exhibited a monotonic decrease in motivation, those without a list exhibited a nonmonotonic pattern, showing the lowest motivation in the middle of the trip.

Web Appendices F-G report two replications of study 2 with frequent grocery shoppers recruited from the Prolific research platform. We found that our results are robust to controlling for the size of the shopping list (replication 1), providing an exogenously generated list (replication 2), randomizing category order (replication 2), and removing budget feedback (replications 1 and 2).

**Study 3: Changing the Focus on the Shopping List**

Study 3 underscores the impact of shopping-list usage: focusing consumers on the initial state (i.e., a to-date frame) when tracking their progress during the trip. Specifically, we tested whether an explicit to-date framing (i.e., crossing off completed items on the list) matches previous list-usage results and whether an alternative to-go list framing (i.e., highlighting remaining items) reverses this pattern.

**Method**

We recruited 184 participants from Prolific to complete an online shopping trip in one of three randomly assigned conditions: the same no-list condition as in study 2, and two variations of the list condition, to-date and to-go. In the to-date list condition, each page of the online store display tablet crossed off the list items with a red line after purchase. In the to-go list condition, each page of the online store display highlighted remaining list items with red boxes (see Appendix D for stimuli; additionally, Web Appendices H-I report two post-tests that verified the effectiveness of the framing manipulation in changing shoppers’ focus). We hypothesized that
the to-date condition would replicate list patterns observed so far (i.e., a monotonic increase in inter-choice time), whereas the to-go condition would exhibit the opposite pattern (i.e., a monotonic decrease in inter-choice time). We followed the same analysis procedure as study 2, with dummy coding of the conditions (the no-list condition served as the reference category). The sample for analysis included 1,288 inter-choice times from 182 participants (excluding two participants with errors recording inter-choice time). On average, the to-date list shoppers spent 152 seconds to select 6.43 items totaling $26.76, the to-go list shoppers spent 160 seconds to select 7.49 items totaling $30.64, and the no-list shoppers spent 161 seconds to select 8.48 items totaling $32.62.

Results

As expected, the to-date and to-go conditions revealed opposite monotonic motivation trends (see Figure 4). Consistent with the list usage in previous studies, the to-date condition again showed a positive effect of trip progress ($\beta = 3.1457$, Wald $\chi^2(1058) = 47.857$, $p < .0001$), while the quadratic effect of trip progress was not significant ($\beta = -0.2223$, Wald $\chi^2(1058) = 0.08$, $p = .77$). In contrast, the to-go condition showed a negative effect of trip progress ($\beta = -4.6181$, Wald $\chi^2(1058) = 56.94$, $p < .0001$), while the quadratic effect of trip progress was not significant ($\beta = -0.6216$, Wald $\chi^2(1058) = 0.31$, $p = .58$). Finally, the no-list condition again had a negative quadratic effect of trip progress ($\beta = -4.0169$, Wald $\chi^2(1058) = 42.43$, $p < .0001$), and the effect of trip progress was positive ($\beta = 0.4473$, Wald $\chi^2(1058) = 6.66$, $p = .01$).

Discussion

Study 3 provides evidence that shopping-list usage influences motivational dynamics by shifting consumers’ reference points as they track their progress during the trip (as verified in two post-tests in Web Appendices H-I). When a list featured a to-date frame (i.e., crossing off
completed items), there was a monotonic decrease in motivation, just as in the natural list conditions (without external framing manipulation) documented in prior studies. However, when the same list featured a to-go frame (i.e., highlighting remaining items), there was a monotonic increase in motivation.

**General Discussion**

An in-store field study and two online experiments (plus two replication studies) consistently showed that consumers’ motivation patterns diverged depending on whether or not they had a shopping list. Whereas consumers with lists exhibited a deceleration of shopping speed over the course of their trips, consumers without lists showed a curvilinear trend in inter-choice time (i.e., a stuck-in-the-middle effect).

These patterns reveal the roles that goal structure and reference points serve for consumers in the marketplace. The average effects in our studies support past findings that consumers become more motivated as they approach the end of a journey (e.g., Lee & Ariely, 2006), and we further contribute to the extant theories of shopper psychology by highlighting the driving role of list usage on in-store motivation. While prior research has documented the importance of reference points and framing in self-regulatory tasks (Heath et al., 1999; Koo & Fishbach, 2008), we connect these theories to shopping-list usage and demonstrate: (1) how shopping-list usage affects the choice of reference points (i.e., a to-date frame for list shoppers and a natural shift between two reference points for no-list shoppers); (2) how reference points dynamically affect shoppers’ motivation throughout the course of the trip; and (3) how shoppers’ motivation evolves in the context of completing multiple shopping goals. Thus our research contributes a critical theoretical extension of past research on the pursuit of a single, externally
provided goal (e.g., Bonezzi et al., 2011) and provides robust evidence that the psychophysics of goal pursuit can be applied to a multiple-goal context with consumer-generated goals.

Building on our findings, we encourage future research to explore other drivers of the dynamics in shopper motivation, such as the presence of a shopping partner or group, and the differing purposes of shopping trips (Lee et al., 2018). For example, hedonic shopping goals (e.g., shopping for gifts or home decorations) may lead a shopper to spend more time browsing between product choices rather than aiming to complete the shopping trip as fast as possible (Arnold & Reynolds, 2003); in these situations, perhaps the greatest motivation (i.e., longest browsing/exploration time) would occur in the beginning, even with a shopping list.

Managerially, an understanding of the psychophysics of shopper motivation sheds new light on the phenomenon of unplanned purchasing (Gilbride, Inman, & Stilley, 2015; Hui et al., 2013; Inman, Winer, & Ferraro, 2009) and the design of dynamic in-store communications (MSI, 2018). In particular, as shopping speed decelerates (i.e., greater inter-choice time), the likelihood that a given purchase is unplanned should increase, reflecting exploratory shopping behavior. In support of this pattern, our field study reveals a monotonic increase in the likelihood of an unplanned purchase for list shoppers and a curvilinear trend for no-list shoppers where an unplanned purchase is most likely in the middle of a trip (see Web Appendix J for analysis). Thus, retailers and brands may stimulate incremental unplanned purchases by introducing new or impulse purchase items to no-list shoppers in the middle of a trip and by displaying commonly forgotten items to list shoppers at the end of a trip (Fernandes, Puntoni, van Osselaer, & Cowley, 2016). We also speculate that marketers can use digital shopping lists to increase or decrease shopping speed by either checking off completed items or highlighting remaining items. Overall, by understanding how consumers’ motivation evolves during the course of their shopping trips,
retailers and brands can more effectively manage each moment of goal pursuit in the marketplace, from the beginning to the end.
References


Fig. 1. Conceptual figure. The impact of progress and reference points frames on motivation in a task, as well as on inter-choice time in a shopping trip.

**Motivation in a task**

![Graph showing motivation in a task](image)

**Inter-choice time (i.e., inverse of motivation) in a shopping trip**

![Graph showing inter-choice time in a shopping trip](image)
Fig. 2. Study 1 field study results. List usage moderated the effect of trip progress on inter-choice time.
Fig. 3. Study 2 online experiment results. Manipulated list usage moderated the effect of trip progress on inter-choice time.
Fig. 4. Study 3 online experiment results. Manipulated to-date versus to-go list framing reversed the effect of trip progress on inter-choice time for list shoppers.
Appendix

A. Portable Head-Mounted Video Camera Worn by Participants (Study 1)
B. Study 1 Supplementary Descriptive Statistics

![Histogram of Inter-choice Time](image)

**Study 1: Histogram (distribution) of Inter-choice Time**

**Study 1: Top 10 Purchased Categories**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fresh fruits and vegetables</td>
<td>612</td>
<td>27%</td>
</tr>
<tr>
<td>2 Milk</td>
<td>96</td>
<td>4%</td>
</tr>
<tr>
<td>3 Bread/rolls/buns</td>
<td>93</td>
<td>4%</td>
</tr>
<tr>
<td>4 Fresh meat and poultry</td>
<td>79</td>
<td>3%</td>
</tr>
<tr>
<td>5 Condiments and spices</td>
<td>77</td>
<td>3%</td>
</tr>
<tr>
<td>6 Cheese</td>
<td>73</td>
<td>3%</td>
</tr>
<tr>
<td>7 Canned food</td>
<td>69</td>
<td>3%</td>
</tr>
<tr>
<td>8 Fresh baked goods</td>
<td>63</td>
<td>3%</td>
</tr>
<tr>
<td>9 Fruit juices and drinks</td>
<td>61</td>
<td>3%</td>
</tr>
<tr>
<td>10 Salty snacks and nuts</td>
<td>58</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Study 1: Trip-Level Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>List Shoppers</th>
<th>No-List Shoppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopper Count</td>
<td>88</td>
<td>149</td>
</tr>
<tr>
<td>Average Inter-choice Time (minutes)</td>
<td>1.58</td>
<td>1.80</td>
</tr>
<tr>
<td>Total Purchase Count</td>
<td>11.91</td>
<td>8.30</td>
</tr>
<tr>
<td>Total Basket Size (dollars)</td>
<td>$52.53</td>
<td>$35.59</td>
</tr>
<tr>
<td>Total Shopping Time (minutes)</td>
<td>18.26</td>
<td>14.52</td>
</tr>
<tr>
<td>Total In-Store Distance (feet)</td>
<td>1670.97</td>
<td>1316.57</td>
</tr>
</tbody>
</table>
C. Example of Bread Category in the Simulated Online Grocery Store (Study 2)

Bread

(Category #1/15)

- Dave’s Killer Bread Organic White Bread Done Right Bread: $6.59 each
- Sara Lee Soft & Smooth Whole Grain White Bread: $5.19 each
- Crowneet Original Oatnut Bread: $4.89 each
- Dave’s Killer Bread Thin Sliced 21 Whole Grains and Seeds Bread: $5.89 each
- Udi’s Gluten Free Whole Grain Bread: $7.39 each
- Franz Bread, Organic, Twenty-Four: $6.49 each
D. Example of To-date versus To-go List Framing Manipulation in Study 3

To-date List Frame (after completing the list purchase of bread):

Shopping List: Bread, Tortilla Chips, Cereal, Toothpaste

To-go List Frame (after completing the list purchase of bread):

Shopping List: Bread, [Tortilla Chips, Cereal, Toothpaste]