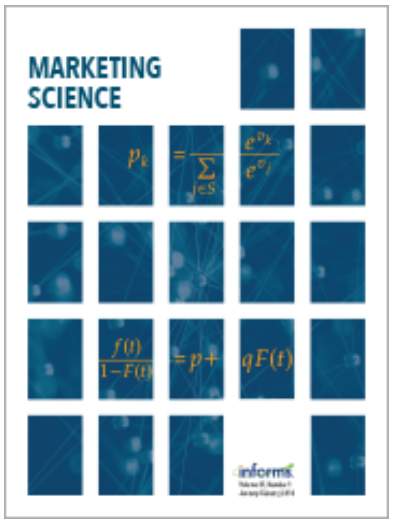

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Consumer Reactions to Drip Pricing

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Abstract. This research examines how drip pricing—a strategy whereby a firm advertises only part of a product's price up front and then reveals additional mandatory or optional fees/surcharges as the consumer proceeds through the buying process—affects consumer choice and satisfaction. Across six studies, we find that when optional surcharges are dripped (versus revealed up front) consumers are more likely to initially select a lower base priced option which, after surcharges are included, is often more expensive than the alternative. Moreover, consumers exposed to drip pricing tend to ultimately select this lower base price but higher total price option, even after being exposed to the total price and given the opportunity to change their selection and even though they are relatively dissatisfied with it. We explore why drip pricing has these effects and find that they are driven by consumers' perceptions regarding the costs and benefits of starting over and switching. Specifically, we find that high perceived search costs (study 2), self-justification (study 3), and mistaken perceptions regarding the potential gains of switching because of inaccurate beliefs that all firms charge similar additional fees/surcharges (study 4) all play roles. We discuss the implications of these findings for marketers, consumers, and policy makers.

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Supplemental Material: Data and the online appendix are available at https://doi.org/10.1287/mksc.2019.1207.

Keywords: drip pricing • pricing • consumer protection • hidden fees

> They set their fares lower on initial ticket price, then kill you on baggage fees. $55 to carry on, $50 to check in on my LA-Chicago flight. That's each way! They don't serve a complimentary drink (that's extra), you have to pay extra to pick seats, etc. End result is they are not that much cheaper, if at all in many cases, than other airlines and they are the least comfortable airline in the US—uncomfortable seats with little room. In other words, they are TERRIBLE! Choose another airline. Seriously.
>
> —Dominik, U.S. Spirit Airlines flyer (November 27, 2016). Overall rating: 1/10 stars
>
> EDITOR'S COMMENT: This is why it's important to do a final tally and check other airlines before actually paying. All the fees are stated throughout the booking process so it's important to add them all up first.[1]

1. Introduction

The above customer review (and editor response) is real and exemplifies a common situation that can occur with drip pricing. One firm may make prominent early in the buying process a price that appears lower than competitors' prices in an attempt to lure in customers. However, once one or more commonly accepted add-ons are selected and their associated prices added to the base price, the total price can often be more expensive than that of competitors. The U.S. Federal Trade Commission (FTC 2012a, p. 1) defines drip pricing as "a pricing technique in which firms advertise only part of a product's price and reveal other charges later as the customer goes through the buying process." The additional charges can be mandatory charges, such as hotel resort fees, or fees for optional upgrades and add-ons.

Drip pricing is frequently used by firms in domains as diverse as the airline, hotel, rental car, event ticketing, and financial services industries, and it has become a major cause for concern for regulators throughout the world who worry that the practice is harmful to consumers (Australian Competition and Consumer Commission (ACCC) 2010, Huck and Wallace 2010, Department of Transportation 2011a, Carrns 2019, FTC 2019). Indeed, various regulatory agencies have passed legislation and/or issued fines, penalties, and warnings to companies who engage in drip pricing. For example, the ACCC ordered the country's two largest airlines to pay penalties for misleading customers with drip pricing (Palmer 2017),

and the Canadian Competition Bureau (2014) took similar action against several retailers and rental car agencies (Evans 2016, The Canadian Press 2017). In the United States, the FTC (2012b) warned 22 hotel operators that their use of drip pricing for mandatory resort fees might be deceptive and urged them to review how they displayed prices to ensure that they were not violating any laws.

Regulators worry that drip pricing may impose two costs on consumers (Shelanski et al. 2012): (1) a monetary cost, which may result from making a product purchase that is more expensive than what would have been made if the prices of the surcharges had been known up front (indeed, if consumers had known about the surcharges, they may have forgone the purchase entirely), and (2) increased search costs for price comparisons (Sullivan 2017). However, despite the regulatory and consumer backlash to drip pricing, firms continue to use it, likely because it is highly profitable. Industry data show that, in 2017, U.S. airlines earned approximately $57 billion in "ancillary fee" revenue above the base ticket prices (Josephs 2017). Similarly, U.S. hotels earned approximately $2.7 billion from fees and surcharges in 2017 (Rosenbloom 2017). Consistent with this, some economic models of drip pricing show that the practice leads to increased profits for firms (Ellison 2005).

Given drip pricing's prevalence and its potential to harm consumers, research on how consumers respond to it is surprisingly limited. The little extant research often uses the terms partitioned pricing (Morwitz et al. 1998) and drip pricing interchangeably, although they differ in significant ways. In addition, prior research has primarily focused on the dripping of mandatory surcharges (Huck and Wallace 2010, Shelanski et al. 2012, Robbert and Roth 2014, Repetti et al. 2015, Robbert 2015, Sullivan 2017, Blake et al. 2018), though it is also common for firms to drip optional surcharges. Also, although economic scholars have explored the related topics of price obfuscation, transparency, and shrouding practices (Ellison 2005; Gabaix and Laibson 2006; Hossain and Morgan 2006; Chetty et al. 2009; Ellison and Ellison 2009; Brown et al. 2010; Zenger 2013; Chiles 2017; Seim et al. 2017a, b), this body of research has largely focused on the impact of these strategies on marketplace structure and firm profitability, rather than on consumer reactions.

Thus, our goal is to fill these gaps and to offer novel insights into how drip pricing of optional (versus mandatory) surcharges affects consumer judgments, choices, and satisfaction with their choices. Although current U.S. regulations concerning drip pricing cover only the disclosure of mandatory surcharges, the dripping of optional surcharges is an increasingly common practice, and policy makers have debated whether regulations should be expanded to cover such fees (Silk 2017). As a result, the current research has the potential to inform this important policy debate as well as other regulatory changes being contemplated regarding the dripping of mandatory surcharges in the hotel and ticketing industries (Carrns 2019, FTC 2019). Furthermore, our findings also have implications for the recent push to remove some regulations regarding the dripping of mandatory surcharges; in particular, regulations that currently require airlines to advertise base fares with mandatory fees, such as taxes, included (Silk 2017). Finally, we add to the literature by focusing on situations in which firms strategically set their base prices lower than those of a competitor, knowing that, with commonly accepted add-ons, their total prices exceed those of the competitor. These firms may anticipate that these initial decisions will be sticky even when information regarding add-on prices and total prices is revealed. For this reason, we examine whether, in these contexts, consumers exposed to drip pricing are disproportionately likely to initially select a lower base price option that, once all of the add-on fees are included, will ultimately be more expensive than the alternative. We then examine whether these consumers will change their initial decisions when given total price information and the opportunity to do so. We posit that consumers may stick with their initial selection (and reject the opportunity to change their selection) even if it is more expensive than the alternative and even if they are relatively dissatisfied with it, and we test several process explanations based on participants' self-reports, economic theory, and consumer psychology for why consumers may engage in such behavior.

The rest of the paper is organized as follows. First, we provide a short summary of the current regulations and debates concerning drip pricing in the United States. We then move on to a brief summary of related research before developing our predictions. We next describe the basic experimental design used in all of our studies, and we then present the findings from six experiments, four of which involve a consequential or incentive compatible decision. All of these studies examine situations in which one firm sets its prices such that its base price is lower than that of a competitor but, when commonly selected add-ons are added to the base price, the total price can be more expensive than that of the competitor. Across these studies, we show that consumers exposed to drip pricing (versus nondrip pricing, with the optional add-on fees presented up front) are significantly more likely to (1) initially select the option with the lower base price, (2) make a financial mistake by ultimately selecting the option that has a higher total price than the alternative option, given the add-ons

chosen, and (3) be relatively dissatisfied with their choice. Importantly, our results hold even though participants had the opportunity to start over and change their selection after they were exposed to the dripped surcharges and total prices. Indeed, we find that participants are resistant to changing their choice when given the opportunity to do so, and we find evidence that both economic and psychological reasons related to the perceived benefits and costs of switching drive this reticence, including a belief that the search costs of starting over outweigh the benefits, psychological costs associated with self-justification, and misperceptions of the potential benefits to be gained because of inaccurate beliefs that all firms charge similar surcharges. This is an important set of findings given that firms often claim that drip pricing is not harmful because add-on prices are disclosed during the search process, total prices are revealed before consumers have to confirm their purchase, and consumers can terminate the purchase at any stage during the process. However, this research highlights the critical role that an initial base price has on consumer choice, behavior, and satisfaction in subsequent stages of the purchase process. We conclude with a broader discussion of our findings, their implications and limitations, and areas for future research.

1.1. Background

1.1.1. U.S. Regulations. In 2011, the U.S. Department of Transportation (DOT) issued an "Enhancing Airline Passenger Protections Rule" covering the airline industry, which included, among other things, two requirements related to drip pricing: (1) the full fare advertising rule, which said that all government taxes and fees must be included in every advertised price, and (2) a provision that airlines must allow reservations to be held at the quoted fare without payment, or cancelled without penalty, for at least 24 hours after the reservation is made (DOT 2011a). When the changes were announced, the Secretary of Transportation stated that "airline passengers have the right to be treated fairly," implying that drip pricing is unfair (DOT 2011b, p. 1). However, regulators and airlines seem to disagree on this point. Regulators consider it to be a deceptive pricing practice and harmful to consumers because it increases their financial costs and search costs. As such, the requirements around mandatory surcharges are presumably aimed at reducing deception and financial and search costs. On the other hand, the airlines argue that because the total price is provided to consumers before any final purchase is made—and consumers are not obligated to make a purchase—the practice is neither deceptive nor harmful (Bender 2014).

In 2014, Congress proposed the Transparent Airfares Act of 2014 (Elliott 2014a), which would no longer require airlines to include mandatory taxes and fees in their advertised prices. Instead, they would be allowed to initially quote a lower base price that excludes mandatory fees and then reveal the full price at the end of the booking process. In response, the U.S. Senate proposed the Real Transparency in Airfares Act, which would leave the current rules in place but increase the penalties for airlines that violate the pricing regulations (Elliott 2014b). To date, neither bill has been enacted, and the debate regarding regulations concerning drip pricing continues.

In January 2017, the DOT proposed legislation to require airlines to disclose up front any fees associated with carry-on and checked luggage (DOT 2017). This was a modification of legislation proposed earlier that would also require the upfront disclosure of the price associated with reserving a seat. Under current law, airlines are required only to inform consumers that there may be additional fees and where they can go to find those fees. If this proposed legislation had been enacted, airlines would have no longer been able to legally drip surcharges associated with luggage later in the purchase process. However, the Trump administration subsequently withdrew the proposal (Levin 2017).

In April 2018, Congress introduced the FAA Reauthorization Act of 2018, which, if the original proposed form had been approved, would again have allowed airlines to advertise fares that exclude mandatory and optional surcharges, including taxes. Consumer advocates were deeply concerned about this potential rollback of the 2011 full fare advertising rule (Elliott 2018). However, the final bill that passed in October 2018 maintained the full fare advertising rule, requiring that the advertised airfare include all government-imposed mandatory taxes and fees.

However, regulatory interest in drip pricing is not limited to the airline industry. In the ticketing industry, members of Congress recently reintroduced the Better Oversight of Secondary Sales and Accountability in Concert Ticketing Act of 2019, also known as the BOSS ACT. Among other requirements related to ticketing scarcity and resale, this bill would also require initial full disclosure of total ticket prices and the elimination of the dripping of additional fees later in the shopping process, in both the primary and secondary ticket markets (NCL Communications 2019). Additionally, in October 2019, two members of Congress introduced the Hotel Advertising Transparency Act of 2019, which would require advertised hotel prices to include any mandatory fees other than taxes (Sampson 2019).

1.1.2. Related Literature. Given the current debate and regulatory activity surrounding drip pricing, it is critical to understand its effects on consumers. Findings from the hidden fees (Grossman 1981, Milgrom 1981), after markets (Waldman 2012), obfuscation (Ellison and Ellison 2009), and shrouding (Gabaix and Laibson 2006) literatures are useful in understanding some effects of drip pricing. This research has developed economic models of a market in which one of these pricing strategies is used and then examined the subsequent effect on market structure, consumer demand, and competition. Models that assume that consumers have rational expectations about unadvertised prices conclude that, as long as there are no costs associated with disclosing information about add-on prices, consumers will not be harmed because they will assume high add-on prices, which will dampen demand (Grossman 1981, Milgrom 1981, Sullivan 2017). However, subsequent models showed that if some consumers do not have rational expectations (i.e., "myopes" or naïve consumers) and do not fully anticipate that there will later be add-on fees (Gabaix and Laibson 2006) or do not fully process add-on fees, they will underestimate total costs (Chetty et al. 2009, Farrell 2012) and can be harmed by paying higher prices than they otherwise would have (Sullivan 2017). However, little empirical work has examined whether these predictions actually manifest in the marketplace. One notable exception is Seim et al. (2017b), which provides empirical support for the notion that, when consumers are inattentive (which survey data suggest a sizeable segment of consumers are with respect to add-on fees) and the marketplace is competitive, firms have an incentive to set low base prices but high add-on prices.

Many of the presumed effects of drip pricing on consumers are informed by research on partitioned pricing (Morwitz et al. 1998), which is a pricing practice whereby firms separate mandatory—not optional—surcharges from base prices. In most partitioned pricing research, the base prices and surcharges are presented simultaneously (a key distinction from drip pricing). This body of research largely shows that when prices are partitioned (versus not), consumers do not pay full attention to the surcharges, they underestimate total prices, and on average, they are more likely to purchase (Morwitz et al. 1998, Chakravarti et al. 2002, Lee and Han 2002, Xia and Monroe 2004, Chetty et al. 2009, Greenleaf et al. 2016, Abraham and Hamilton 2018).

In contrast to partitioned pricing, drip pricing involves a sequential process, whereby the base price is revealed first, and then the add-ons prices are revealed later (e.g., on subsequent pages). Although drip pricing can involve mandatory or optional add-ons, the few experimental studies that have compared drip to partitioned pricing have used mandatory surcharges, and some have found that drip pricing results in lower purchase intentions (Robbert and Roth 2014, Robbert 2015). These studies also found that drip pricing leads to more accurate total price estimates (although total prices are still underestimated), higher perceptions of price unfairness, and stronger feelings of deception. However, in other experimental work, Huck and Wallace (2010) found that dripping mandatory surcharges (versus partitioned pricing) resulted in lower search, more purchasing, and suboptimal decisions, even with experience, and analysis of field data provides evidence that drip pricing leads to increased purchasing and the purchasing of more expensive products (Blake et al. 2018). Because the drip pricing findings are mixed, more research is clearly needed.

It is important to make clear that optional add-ons can be part of á la carte pricing or price customization strategies, which can be valid methods for capturing consumer heterogeneity in preferences for such add-ons (Shelanski et al. 2012). Our focus is not on how consumers react to the mere inclusion or exclusion of optional surcharges from the base price. Rather, we focus on the temporal aspect of the surcharge disclosure—whether information about surcharges for optional add-ons is provided up front or whether it is dripped during the purchase process—and the impact this has on consumers.

1.1.3. Predictions. When a firm uses drip pricing, consumers become aware of the surcharges for the optional add-ons only after they have initially made a selection and begun to proceed through the purchasing process. Even if disclosures are provided, such as "additional surcharges may apply," consumers may not fully attend to the disclosure or may underestimate the magnitude of those surcharges (Chetty et al. 2009, Farrell 2012, Seim et al. 2017b). Because consumers may not fully anticipate the optional surcharges, we make the straightforward assumption that, holding all else constant, consumers exposed to drip pricing will initially be more likely to select the option with the lowest *base* price, considering that that is the only information they have at that time (Greenleaf et al. 2016). In contrast, when drip pricing is not used, and consumers are presented with information about optional surcharges up front, at the beginning of the purchase process, they will use this information when making their initial selections. Therefore, when the surcharges are presented up front, we instead predict that, holding all else equal, consumers will initially be more likely to select the option with the lowest *total* price (base + optional

surcharges), based on their preferences for optional add-ons.

Firms that use drip pricing would likely argue that consumers' initial choices are inconsequential, considering that all surcharges and total prices are eventually revealed and consumers always have the opportunity to abandon their initial choice and start over. As such, consumers' *ultimate* (versus initial) choices are what matter. We make a new contribution to the drip pricing literature by focusing on this very question. That is, what happens when consumers are given the opportunity to abandon an initial decision and restart their search? We posit that, in general, consumers will be resistant to changing their initial selections and, as a result, these initial selections will tend to be sticky. We therefore predict that consumers exposed to drip pricing will also be more likely to *ultimately* select the lower base price option. Note that firms can strategically set prices so that their option has the lowest base price but will ultimately be more expensive than a higher base price option if add-ons are selected. We predict that, in these contexts, consumers exposed to drip pricing will be more likely to make a financial mistake, paying more than necessary given their selected add-ons. Finally, we also examine the impact of drip pricing on consumer satisfaction, considering that it may lead consumers to be more likely to select less satisfying options and because exposure to dripped surcharges may be unpleasant in and of itself (Lambrecht and Skiera 2006). We test and find support for our predictions in studies 1a, 1b, and 1c, which were designed to demonstrate these basic effects.

Our next block of studies (studies 2–4) explores why consumers exposed to drip pricing ultimately select an option with a lower base price even if, when all add-on fees are included, it ends up being more expensive and even if they are relatively dissatisfied with it. In our studies, and in the real world, consumers are given the information and opportunity to make a change before committing to a final choice with drip pricing. However, we predict that, in general, consumers will not take advantage of this opportunity to change their selection. Studies 2–4 draw on participants' self-reports, economics, and consumer psychology to explore the role that the perceived costs and benefits of switching play in consumers' ultimate purchase decisions.

Overall, we argue that consumers may hold the view that the costs (time, effort, or psychological) of switching outweigh its potential benefits. First, on the cost side of this trade-off, consumers may believe that the actual or the psychological costs of switching are substantial and not worth the potential benefits. In study 2, we test this by examining whether consumers are less likely to make financial mistakes in their decision process when we reduce search costs. In study 3, we examine the possible role of psychological costs to the self, namely, having to admit to oneself that he or she has made a mistake (i.e., self-justification; Festinger 1957, Aronson 1976).

We also consider whether consumers' tendencies to ultimately select the more expensive option with drip pricing are due to misperceptions regarding the benefits of restarting the search process. More specifically, consumers may hold the view that the potential benefits to be gained from restarting search are minimal. One reason this may occur is that consumers may hold strong prior beliefs that all firms charge for similar optional add-ons and/or that the magnitude of the surcharges for these optional add-ons are similar across firms. Thus, consumers may assume that there is no point in restarting their search and changing their selection—even if they are frustrated by the optional surcharges—because selecting another option is not likely to save them money (i.e., because the other option is also likely to charge for the optional add-ons) but will certainly increase their (search) costs (Fletcher 2012). We test this account in study 4 by manipulating these beliefs.

Because we believe that all of these processes are plausible and may jointly operate, we independently test their possible roles in explaining why consumers exposed to drip pricing ultimately select more expensive options. Before presenting the studies, we begin with an overview of our experimental paradigm, because our experimental design is similar across all of the studies.

2. Overview of the Experimental Paradigm

Each study had three parts. In part 1, participants read a purchase scenario and made a choice between two options (e.g., Airline A and Airline B). In part 2, they selected any optional add-ons they wanted to add to their purchase (e.g., baggage, reserved seat). Participants were next provided with the total price of their purchase and were given the opportunity either to complete the transaction or to start over. If they decided to start over, they returned to the initial choice page and went through the entire purchase process again. Once participants completed the transaction, their choice at that stage was considered to be their ultimate choice and their total price was determined (thus allowing us to determine whether a financial mistake had been made). They then moved on to part 3, in which their satisfaction with their choice was measured. This design allowed us to examine the effect of drip (versus nondrip) pricing on participants' initial choices, decisions regarding whether to start over,

their ultimate choices, financial mistakes, and satisfaction regarding their choices.

In addition, and importantly, in four of the six studies, participants' choices were consequential. Specifically, in studies 1a, 2, and 4, participants received bonuses that were contingent on their spending, with larger bonuses going to those who spent less. In study 1c, participants were entered into a lottery to actually receive their selection. Also, as our focus is on optional surcharges, in all studies but one (study 3, in which we hold the add-ons constant for comparability across conditions), participants could freely select any add-ons that they wanted.

2.1. Part 1: Initial Choice

In studies 1a, 1b, 2, and 3, the scenario involved booking a flight for a beach vacation with friends. To ensure that our results generalize to another context, for the last study in each block (i.e., study 1c in the demonstration study block and study 4 in the process study block) the context instead was that of selecting a hotel for a local staycation.

For both contexts, participants were presented with information about the base prices (which included mandatory taxes and fees) for two different offerings, with one base price greater than the other (e.g., in study 1a, the base prices were $239 for one airline and $194 for the other). Participants were informed that additional surcharges for optional add-ons may apply for the option with the lower base price. (These options were all included in the base price of the higher base price option.) Based on random assignment, these additional surcharges either were presented directly beneath the base prices (nondrip condition) or were dripped (drip condition) over several subsequent pages. Participants next selected one of these options. Thus, participants in the nondrip condition saw all of the surcharges prior to making their initial choice between the options. In contrast, in the drip condition, participants saw them only after making their initial selection.

2.2. Part 2: Optional Add-Ons, Opportunity to Start Over, and Ultimate Choice

Participants next decided whether to purchase any optional add-ons. The add-ons and their prices were presented one at a time, each on a different screen. For example, in studies 1a and 1b, participants were first asked whether they wanted to add a carry-on or checked bag for each leg of their journey ($28 for a carry-on and $30 for a checked bag each way for the lower base price option; both were included in the base price for the higher base price option) and, after, were asked if they wanted to reserve a seat for each leg of the journey ($18 each way for the lower base price option; included in the base price for the higher base price option). In three of the studies (studies 1a, 1b, and 2), participants were presented with running total prices that were updated after each add-on was selected. Table 1 shows the base prices and the prices for the optional add-ons for all studies.

After adding the optional add-ons, all participants were presented with the final total price for their selected option. Participants were then given the opportunity to complete the transaction or start over. Those who elected to start over returned to the initial choice page—where they could select either option—and went through the entire purchase process again. When participants elected to complete the transaction, we recorded their choice as their ultimate (versus initial) choice.

2.3. Part 3: Satisfaction with Choice

Last, participants indicated their satisfaction with their chosen option. Specifically, they were asked the following questions on seven-point scales with 1 = extremely unlikely and 7 = extremely likely (with modified wording for the hotel scenarios): "How likely are you to fly this airline again?"; "How likely are you to recommend this airline to your friends and family?"; "How likely are you to tell others about your purchase experience with this airline?"; and "If you were presented with the same choice of airlines again, how likely would you be to switch your choice?" (reverse coded). In addition, in the hotel studies (studies 1c and 4), participants were also asked their level of agreement (1 = strongly disagree, 7 = strongly agree) with the following statements: "I feel good about the hotel that I chose," "I regret choosing this hotel," and "The hotel's pricing is deceptive. These last two items were reverse coded." Participants then responded to demographic questions, such as gender and age.

Note that as we present the details for each study in the sections that follow, we focus the procedure sections on the aspects of that study that depart substantially from this basic paradigm. Detailed materials for each study, including the full scenarios, are available in the online appendix.

A few additional points are worth mentioning. First, consistent with how some firms behave, all of the studies reported in the paper were designed such that the lower base option would become more expensive than the higher base option if commonly accepted add-ons were included. Second, the surcharge information is only dripped but not otherwise shrouded (e.g., presented in small font or hidden with other information). Third, we examine only optional add-ons that are paid for at the same time as, and along with, the base price (though, in the real

Table 1. Pricing Structure for Lower Base Price Option and Higher Base Price Option Across Studies

Studies 1a and 2	Base fare	Carry-on bag (each way)	Checked bag (each way)	Reserved seat (each way)	Ship luggage with FedEx	Purchase new clothes	Carry-on bag/checked bag paid for prior to departure	Carry-on bag/checked bag paid for at gate
Lower base price option	$194	$28	$30	$18	$25	$80	$40	$60
Higher base price option	$239	$0	$0	$0	$25	$80	$0	$0
Study 1b	**Base fare**	**Carry-on bag (each way)**	**Checked bag (each way)**	**Reserved seat (each way)**				
Lower base price option	$194	$28	$30	$18				
Higher base price option	$239	$0	$0	$0				
Study 1c	**Base price**	**Wi-Fi**	**Breakfast buffet**	**Self-parking**	**Gym, pool, spa access**			
Lower room rate	$227	$13	$30	$38	$25			
Higher room rate	$239	$0	$0	$0	$0			
Study 3	**Base fare**	**Carry-on bag (each way)***	**Checked bag (each way)**	**Reserved seat (each way)***				
Lower base price option	$194	$28	$30	$18				
Higher base price option	$239	$0	$0	$0				
Study 4	**Base fare**	**Wi-Fi**	**Breakfast buffet**	**Self-parking**	**Gym, pool, spa access**			
Lower room rate	$240	$15	$20	$20	$25			
Higher room rate	$255	$0	$0	$0	$0			

*Participants in study 3 were instructed to select these options.

world, some add-ons become available only after purchase, such as buying minibar items in a hotel). In addition, our participants are relatively inexperienced consumers versus experts with significant relevant experience.

3. Study 1a

Study 1a uses a consequential choice to provide a first test of the impact of drip pricing on participants' initial and ultimate choices, likelihood of making a financial mistake, and choice satisfaction. We also explore why some participants elected not to start over when given that opportunity.

3.1. Methods

3.1.1. Participants and Design. Four hundred eight Amazon Mechanical Turk (mTurk) workers (57.7% female, M_{Age} = 38.70, SD_{Age} = 12.73) completed this study for $1.00 plus a potential bonus (explained next). Participants were randomly assigned to either the drip or the nondrip surcharge presentation condition in a two-cell between-subjects design.

3.1.2. Procedure. Participants were asked to imagine that they had decided to take a three-night beach vacation with friends and that they needed to book a round-trip airline ticket for themselves to the destination. To make participants' airline choices consequential, we informed them that they had a budget of $300 for their airfare and associated purchases (i.e., baggage and seat fees) and that they would receive a bonus on mTurk of $0.01 for every $1 of their $300 budget that they did not spend on their flight and associated purchases. For example, a participant who booked a flight for $280 would receive a

bonus of $0.20. Thus, participants had a financial incentive to book the airline option that resulted in the lowest total price.

Participants saw two airline options: a higher base fare ($239) and a lower base fare ($194) option and were asked to choose one. The lower base fare option had an asterisk next to it, which informed participants that additional baggage and seat surcharges may apply for it. Whereas in the nondrip condition these additional surcharges were presented directly below the base fares, in the drip condition, they were revealed only to those participants who selected the lower base fare airline after they made their initial choice.

After making their initial airline choice, participants were presented with the optional add-ons (i.e., a carry-on bag, a checked bag, and a reserved seat) for each leg of the journey and selected the ones that they wanted. Participants were presented with running total prices for their choice, which were updated each time an optional add-on was selected, throughout this process.

After selecting add-ons, participants were presented with the final total price of their chosen airline and were given the opportunity to either start over or complete their purchase. Those who decided to start over returned to the initial page with the two airline options and restarted the purchase process. For those who decided to complete their purchase, one of two things happened. Participants who had selected a baggage option (i.e., either a carry-on or a checked bag) for each flight leg were immediately directed to a "customer satisfaction survey" and responded to the first four questions listed in Section 2.3. However, to prevent mTurk participants from bypassing the baggage options simply to increase their bonuses, and given that very few travelers can feasibly embark on a three-day vacation without any luggage, participants who had not selected either a carry-on or a checked bag for one or both flight legs were notified about this and given a number of options for getting their belongings to and/or from the destination (with prices based on research of the typical market prices for these options). Specifically, participants could ship their belongings to and/or from their destination with FedEx for $25 (each way); they could add a carry-on or checked bag for either or both of their flights ($0 for higher base fare airline, $40 for lower base fare airline—consistent with the practice of increasing the prices of add-ons added after the initial booking process has been completed); or they could purchase new clothes at the destination for $80. Note that participants had the option to leave their clothing and/or luggage at their destination (for $0) and to not bring them on the return flight. After participants made these selections, they were asked whether they wanted to complete their airline purchase or start the entire purchase process over again from the beginning. Participants who elected to start over were returned to the start of the purchase process, whereas those who decided to complete their purchase were then presented with the customer satisfaction survey.

Finally, participants who did not elect to start over at any stage were asked their level of agreement with a series of statements in order to probe why they had made that decision. These statements included the following: "Most airlines charge extra fees for baggage and selecting a specific seat," "Starting over would take too much time," "I think I got a good deal on this airline ticket," and "The extra fees that airlines charge are pretty much the same for all airlines" (1 = strongly disagree and 7 = strongly agree). The complete set of questions is available in the online appendix. In addition, to assess these participants' perceptions of the costs and benefits of starting over, they were asked how long they thought it would have taken them to start over, as well as how much money they thought they could have saved by starting over (from $0 to $100).

3.2. Results and Discussion

For this first study, we present the full details for all of the analyses conducted. Because similar analyses were conducted for the subsequent studies and the results were largely consistent across studies, the results sections for the subsequent studies contain less detail to minimize redundancy. However, Table 2 and Online Appendix Tables W1 and W2 include additional details for all of the studies. Also, note that for all binary logistic regressions, 0 = nondrip condition and 1 = drip condition for the surcharge presentation factor, and 0 = higher base price option and 1 = lower base price option for the choice dependent variable.

3.2.1. Airline Choice. A binary logistic regression revealed a significant effect of surcharge presentation on initial choice (B = 2.21, SE = 0.26, Wald = 72.41, $p < 0.001$). Not surprisingly, as price was the only information provided about the two options, participants in the drip condition (54.5%) were significantly more likely to initially select the lower base fare airline than were those in the nondrip condition (11.7%).

More importantly, few participants (only 15.9%, $n = 65$) decided to start over when given that opportunity. The results of a binary logistic regression showed that a larger percent of participants decided to start over in the drip (25.2%) than in the nondrip condition (6.8%; B = 1.53, SE = 0.32, Wald = 22.85, $p < 0.001$). This effect was mediated by initial airline choice ($Z_{Mediation} = 4.52$, $p < 0.001$; Iacobucci 2012). Thus, whether the optional surcharges were dripped or not had an effect on participants' initial airline choice, which, in turn, affected whether they started over. Indeed, whereas only 6.2% of participants who selected

Table 2. Initial Choice, Start-Over Decision, Ultimate Choice, Price, Mistake, and Overall Satisfaction Results Across Studies

	Drip/nondrip condition		% Initially selecting lower base option	Test statistic (0 = non-drip, 1 = drip)	% Starting over	Test statistic (0 = non-drip, 1 = drip)	% Ultimately selecting lower base option	Test statistic (0 = non-drip, 1 = drip)	Mean price of selected option (SD)	Test statistic	% Making mistake	Test statistic (0 = non-drip, 1 = drip)	Mean overall satisfaction with selection (SD)	Test statistic
Study 1a	Drip		54.5	B = 2.21, SE = 0.26, Wald = 72.41, $p < 0.001$	25.2	B = 1.53, SE = 0.32, Wald = 22.85, $p < 0.001$	36.5	B = 1.62, SE = 0.27, Wald = 35.27, $p < 0.001$	$248.64 (19.84)	$t(404) = 4.55$, $p < 0.001$	24.5	B = 1.34, SE = 0.31, Wald = 19.04, $p < 0.001$	5.39 (1.15)	$t(403) = 4.30$, $p < 0.001$
	Nondrip		11.7		6.8		10.2		$241.60 (9.84)		7.8		5.83 (0.92)	
Study 1b	Drip		49.3	B = 1.68, SE = 0.24, Wald = 47.68, $p < 0.001$	9.0	B = 1.32, SE = 0.52, Wald = 6.58, $p = 0.010$	41.8	B = 1.38, SE = 0.25, Wald = 31.82, $p < 0.001$	$237.11 (25.75)	$t(395) = 1.39$, $p = 0.165$	17.9	B = 0.83, SE = 0.31, Wald = 7.04, $p = 0.008$	5.24 (1.18)	$t(395) = 3.02$, $p = 0.003$
	Nondrip		15.3		2.6		15.3		$240.37 (20.50)		8.7		5.57 (1.00)	
Study 1c	Drip		31.9	B = 1.88, SE = 0.68, Wald = 7.78, $p = 0.005$	0.0	N/A	31.9	B = 1.88, SE = 0.68, Wald = 7.78, $p = 0.005$	$245.40 (15.87)	$t(91) = 0.90$, $p = 0.370$	27.7	B = 1.70, SE = 0.68, Wald = 6.25, $p = 0.012$	5.73 (0.99)	$t(91) = 0.58$, $p = 0.563$
	Nondrip		6.5		0.0		6.5		$242.54 (14.75)		6.5		5.84 (0.92)	
Study 2	Drip	Alternative price absent	37.3		21.5		22.8		$243.39 (14.90)		15.2		5.41 (1.11)	
		Alternative price present	38.7	B = 1.89, SE = 0.29, Wald = 42.08, $p < 0.001$	30.9	B = 1.38, SE = 0.33, Wald = 17.39, $p < 0.001$	16.4	B = 1.46, SE = 0.33, Wald = 19.32, $p < 0.001$	$241.70 (15.64)	$F(1, 782) = 1.14$, $p = 0.287$	6.9	B = 1.21, SE = 0.38, Wald = 10.40, $p = 0.001$	5.54 (1.08)	$F(1, 783) = 23.92$, $p < 0.001$
	Nondrip	Alternative price absent	8.3		6.4		6.5		$241.26 (11.68)		5.1		5.85 (1.00)	
		Alternative price present	8.3		7.3		7.3		$241.77 (11.44)		6.2		5.84 (1.05)	
Study 4	Drip	Similar surcharges	19.6		8.4		19.6		$256.56 (11.64)		9.6		5.64 (1.04)	
		Different surcharges	23.7	B = 1.49, SE = 0.52, Wald = 8.23, $p = 0.004$	12.9	B = 0.51, SE = 0.58, Wald = 0.79, $p = 0.373$	22.8	B = 1.13, SE = 0.46, Wald = 6.02, $p = 0.014$	$256.96 (13.26)	$F(1, 391) = 0.04$, $p = 0.846$	13.0	B = 1.59, SE = 0.79, Wald = 4.06, $p = 0.044$	5.43 (1.15)	$F(1, 395) = 2.87$, $p = 0.091$
	Nondrip	Similar surcharges	5.2		5.2		7.3		$254.68 (4.36)		2.1		5.72 (1.00)	
		Different surcharges	9.6		6.8		9.8		$258.38 (13.75)		7.8		5.70 (1.08)	

Note. Study 3, which involved a different paradigm which would make meaningful comparisons difficult, is not included in this table.

the higher base fare airline decided to start over, 35.8% of those who selected the lower base fare airline started over.

After factoring in those who started over and changed their airline selection, a logistic regression on final airline choice revealed a significant effect of surcharge presentation (B = 1.62, SE = 0.27, Wald = 35.27, $p < 0.001$). Even after having the opportunity to switch their airline choice, participants in the drip condition (36.5%) were significantly more likely to ultimately select the lower base fare airline than were those in the nondrip condition (10.2%).

3.2.2. Percentage Making Financial Mistake. Whereas, in general, selecting a lower base fare airline is not inherently a financial mistake, given the prices we used, for many participants it did end up ultimately being more expensive than the higher base fare airline once the selected add-on surcharges were included. Although it was theoretically possible for participants to select the lower base fare airline and not make a financial mistake (i.e., if they selected to bring a carry-on or checked bag to the destination—or to ship their belongings to the destination—and then to leave their belongings behind at the destination), given the specific base and add-on prices, and the requirement that some money be spent to have clothing at the destination, most participants who selected the lower base price option did make a financial mistake. Overall, significantly more participants in the drip (24.5%) than in the nondrip (7.8%) condition made a financial mistake by selecting the option that, given the selected optional add-ons, was more expensive than the alternative (B = 1.34, SE = 0.31, Wald = 19.04, $p < 0.001$). Table 2 includes the average prices participants paid for their choices by condition for this and all studies.

3.2.3. Downstream Consequences—Overall Satisfaction. As an exploratory factor analysis (with varimax rotation) on the four satisfaction measures revealed that all four items loaded on a single factor (eigenvalue = 2.57, 64.2% of the variance explained), we averaged them to create a single measure of participants' choice satisfaction ($\alpha = 0.69$). An independent-samples t-test on this measure revealed a significant effect of surcharge presentation ($t(403) = 4.30$, $p < 0.001$). Participants in the nondrip condition (M = 5.83, SD = 0.92) were significantly more satisfied with their final choice than were those in the drip condition (M = 5.39, SD = 1.15).

Importantly, a mediation analysis (Iacobucci 2012) revealed that this result was mediated by ultimate airline choice, as there was a significant indirect effect of surcharge presentation on choice satisfaction through ultimate airline choice ($Z_{Mediation} = -5.25$, $p < 0.001$). The reason why satisfaction was lower in the drip condition was because whether the optional surcharges were dripped or not affected participants' ultimate choice which, in turn, affected their choice satisfaction. Indeed, participants who ultimately selected the lower base fare airline reported being significantly less satisfied (M = 4.60, SD = 1.09) than those who selected the higher base fare airline (M = 5.92, SD = 0.84; $t(403) = 12.36$, $p < 0.001$). Thus, drip pricing led participants to be more likely to select the lower base option, and that option led to lower satisfaction.

3.2.4. Reasons for Not Switching. Last, we examined why those participants exposed to drip pricing who initially selected the lower base fare airline decided to stick with their choice (rather than restart) even though for most (66.7%) their choice was more expensive than the other option, and they were relatively dissatisfied with it. Of the six potential reasons, participants expressed agreement with a statement suggesting that perceived costs played a role—specifically, that starting over would take too much time (M = 4.88, SD = 1.73). They also agreed with several statements suggesting that the benefits to be gained might be minimal: that most airlines charge extra fees for baggage and selecting a specific seat (M = 4.98, SD = 1.33), that the extra fees that airlines charge are similar across all airlines (M = 4.65, SD = 1.41), and that the price for their choice was satisfactory (M = 4.78, SD = 1.48). Note that they held these beliefs about the extra fees even though we provided a disclosure to participants when they made their initial choice that optional surcharges only applied to the lower base price option. Overall, these responses suggest that participants decided to not start over because they saw little value in doing so—as it would be costly in terms of time and would yield little financial gain (because all airlines charge similar extra fees).

However, these participants both overestimated the cost and underestimated the benefit of starting over. Indeed, after eliminating two extreme outliers (>1,799 seconds), these participants, on average, thought it would take significantly more time to start over (about 5.5 minutes; M = 341.26 seconds, SD = 243.56), than it actually took for the comparable participants who did start over (about 1.25 minutes; M = 74.70 seconds, SD = 91.60; $t(99) = 6.89$, $p < 0.001$). They also expected to save significantly less money (M = \$15.14, SD = 14.82) than was actually saved by those who did start over (M = \$26.31, SD = 36.55; $t(96) = 2.07$, $p = 0.041$).

3.2.5. Discussion. Study 1a provides initial support for our predictions. Participants in the drip surcharge condition were more likely to both initially and ultimately choose the lower base fare option and, given their add-on choices, were more likely to make a financial mistake than

those in the nondrip condition. In addition, participants in the drip condition were significantly less satisfied with their airline choice. Thus, it appears that dripping optional surcharges may not only harm consumers through increased financial and search costs, but it may also lead them to make decisions with which they are less satisfied.

It is important to note that although the stickiness of the initial decision is what leads participants exposed to drip pricing to be more likely to make a financial mistake, it is not drip pricing itself that leads to initial choice stickiness. Indeed, participants in both conditions were reluctant to restart search, consistent with a general status quo bias or a preference for the current state of affairs relative to any change in that state (Kahneman et al. 1991). In fact, those in the drip condition were more likely to start over after being exposed to the optional surcharges and the final total price than were those in the nondrip condition. Yet importantly, overall, relatively few participants elected to start over when they were given the opportunity to do so. As a result, given their initial choices, participants exposed to drip (versus nondrip) surcharges were significantly more likely to ultimately make a mistake by selecting the option that was more expensive given the optional add-ons that they selected.

The results from study 1a also provide some initial evidence for what drives the effect of drip pricing on choices. Specifically, participants exposed to drip pricing who initially selected the lower base fare airline and decided to complete the transaction rather than start over, reported that they did so primarily because they mistakenly believed that the costs of starting over outweighed the potential benefits. These misperceptions had real consequences. Indeed, these participants bypassed an opportunity to increase their bonus, in just over a minute, by more than $0.25, on average (an extremely good rate for Amazon mTurk workers). In studies 2–4, we manipulate the benefits and costs of starting over to experimentally test whether these perceptions help explain why drip pricing leads to financial mistakes.

One limitation of this study (and of all our studies) is that one could argue that, given our experimental design and initial base prices, the comparisons we make are not appropriate. Specifically, given the experimental design, participants could make financial mistakes for different reasons. In particular, participants in the nondrip condition had full price information at the time of their initial decision, so if they made a mistake by choosing a more expensive option, it is likely the result of inattention or mistakes in processing the price information. In contrast, in the drip condition, making an initial mistake was likely the result of actually paying full attention to the price information, as the lower base option appeared to be the cheaper option given the limited price information available at that stage.

Given this full price information asymmetry across conditions, we also compared the percent of participants who made a financial mistake, given their add-on preferences, across the conditions, based on when they had full information. In the nondrip condition, participants had full information prior to making their initial choice, and 9.3% made a financial mistake (based on their later-revealed add-on choices) with this choice. In contrast, in the drip condition, participants had full information only after their initial choice was made and they went through the add-on selection process; at this stage, 24.5% made a financial mistake with their ultimate choice. Thus, even when we focus on comparing participants based on when they had full price information, those in the drip pricing condition were more likely to make a financial mistake than those in the nondrip condition, consistent with our arguments. This is despite the fact that those in the drip condition who made a financial mistake were likely more attentive to price information than those in the nondrip condition who made a financial mistake.

Study 1a had several other limitations that are worth noting. First, because we required participants to pay for some means by which to get clothes to their destination, one could argue that, in this study, some of the add-ons were more mandatory than optional in nature. Second, some of the options that we provided for how participants could get clothes to their destinations were not very realistic and are likely infrequently used by real travelers. Third, although we accounted for the monetary costs of the options—such as shipping or shopping for clothes—we did not consider the nonmonetary time costs associated with these same options. Finally, although incentive-compatible experimental designs offer many advantages, in this instance, it may have encouraged participants to make decisions that would maximize their bonus, rather than to reflect the decisions that they actually would make in the real world.

To address these limitations, we ran study 1b in which we again manipulated whether surcharge information was dripped or not, but we no longer required participants to pay for some way to get their clothes to the destination (directly or indirectly). We also removed the incentive compatibility and simply asked participants to report what they normally do when they travel.

4. Study 1b

Study 1b is similar to study 1a, except that we allowed participants to freely choose all of their add-ons (versus directly or indirectly forcing them to choose to bring luggage or pay to ship or obtain clothes). One other difference from study 1a is that this study was not

incentive compatible, which removed any financial incentive for participants to select low-cost options that were not consistent with what they would normally select. Finally, we did not measure participants' reasons for not starting over when given that opportunity.

4.1. Methods

4.1.1. Participants and Design. Three hundred ninety-seven Amazon mTurk workers (42.6% female, M_{Age} = 34.85, SD_{Age} = 10.32) completed this study for $1.00. Participants were randomly assigned to one of two surcharge presentation conditions (drip versus nondrip).

4.1.2. Procedure. The procedure in this study was similar to that in study 1a except that this study was not incentive compatible and everyone was free to select, or reject, any add-ons that they wanted.

4.2. Results and Discussion

4.2.1. Airline Choice. A binary logistic regression revealed a significant effect of surcharge presentation on initial choice (B = 1.68, SE = 0.24, Wald = 47.68, $p < 0.001$). Replicating the findings of study 1a, participants in the drip condition were significantly more likely to initially select the lower base fare airline (49.3%) than were those in the nondrip condition (15.3%).

Also, as in study 1a, few participants (only 5.8%, $n = 23$) decided to start over when given that opportunity. The results of a binary logistic regression showed that significantly more participants decided to start over in the drip surcharges condition (9.0%) than in the nondrip condition (2.6%; B = 1.32, SE = 0.52, Wald = 6.58, $p = 0.010$). Initial airline choice again mediated the effect of surcharge presentation on whether participants started over ($Z_{Mediation} = 3.44$, $p < 0.001$; Iacobucci 2012). Thus, whether the optional surcharges were dripped or not again affected participants' initial airline choices which, in turn, affected whether they started over. Specifically, whereas only 1.1% of participants who selected the higher base fare airline decided to start over, 15.5% of those who selected the lower base fare airline started over.

After factoring in those who started over and changed their airline selection, a logistic regression on ultimate airline choice revealed a significant effect of surcharge presentation (B = 1.38, SE = 0.25, Wald = 31.82, $p < 0.001$). Even after having the opportunity to switch their airline choice, participants in the drip condition (41.8%) were significantly more likely to ultimately select the lower base fare airline than were those in the nondrip condition (15.3%).

4.2.2. Percentage Making Financial Mistake. Significantly more participants in the drip (17.9%) than in the nondrip condition (8.7%) made a financial mistake by selecting the option that, given the selected optional add-ons, was more expensive than the alternative (B = 0.83, SE = 0.31, Wald = 7.04, $p = 0.008$).

4.2.3. Downstream Consequences—Overall Satisfaction. An independent-samples t-test on the same satisfaction measure as in study 1a revealed a significant effect of surcharge presentation ($t(395) = 3.02$, $p = 0.003$). Participants in the nondrip condition (M = 5.57, SD = 1.00) were significantly more satisfied with their final choice than were those in the drip condition (M = 5.24, SD = 1.18).

The effect of surcharge presentation on satisfaction was mediated (Iacobucci 2012) by ultimate airline choice ($Z_{Mediation} = -4.56$, $p < 0.001$). Whether the optional surcharges were dripped or not affected participants' ultimate choice, which, in turn, affected their choice satisfaction. Indeed, participants who ultimately selected the lower base fare airline reported being significantly less satisfied (M = 4.72, SD = 1.01) than those who selected the higher base fare airline (M = 5.68, SD = 1.02; $t(395) = 8.49$, $p < 0.001$).

4.2.4. Results of Combined Analysis of Study 1a and Study 1b Data. We next conducted a combined analysis of the data from studies 1a and 1b to help determine whether the findings from study 1a were driven by the experimental design itself (i.e., the fact that the add-ons were not, strictly speaking, optional, and the use of some potentially unrealistic options for transporting clothing to the destination, which also may have included nonmonetary costs for which we did not account) or because of the incentive compatibility. To that end, we combined the data from these two studies and conducted all the same analyses as reported above (i.e., initial airline choice, likelihood to start over, ultimate airline choice, likelihood to make a financial mistake, and choice satisfaction) on the combined data. In addition to surcharge presentation, we included a dummy variable for study and an interaction term (i.e., study dummy by surcharge presentation) as independent variables. We examined the interaction of surcharge presentation and the study dummy to see if the results varied significantly across these two studies. If not, we can be more confident that the results are not an artifact of these concerns regarding the design of study 1a.

The results of the combined analysis replicated all the prior findings and, because none of the interactions terms were significant, suggest that the results of study 1a were not an artifact of its specific design. Specifically, surcharge presentation significantly affected initial choice, with participants in the drip condition being more likely to initially select the lower base fare airline (51.8%) than were those in the nondrip condition (13.6%; B = 2.21, SE = 0.26,

Wald = 72.41, $p < 0.001$). No other effects on initial choice were significant (p's > 0.119). Overall, few participants decided to start over (only 10.8%, $n = 88$). Participants were significantly more likely to start over in the drip surcharges condition (17.3%) than in the nondrip condition (4.9%; B = 1.53, SE = 0.32, Wald = 22.85, $p < 0.001$) and marginally more likely to start over in study 1a (15.9%) than in study 1b (5.8%; B = −0.86, SE = 0.50, Wald = 3.00, $p = 0.083$), but the interaction was not significant ($p = 0.576$).

After factoring in those who started over and changed their airline selection, participants in the drip condition (39.0%) were significantly more likely to ultimately select the lower base fare airline than were those in the nondrip condition (13.0%; B = 1.62, SE = 0.27, Wald = 35.27, $p < 0.001$). In addition, participants were marginally more likely to select the lower base fare airline in study 1b (28.7%) than in study 1a (23.2%; B = 0.51, SE = 0.30, Wald = 2.90, $p = 0.088$), but the interaction was not significant ($p = 0.399$).

Moreover, participants in the drip condition (21.7%) were significantly more likely than those in the nondrip condition (7.4%) to make a financial mistake by selecting the option that, given the selected optional add-ons, was more expensive than the alternative (B = 1.34, SE = 0.31, Wald = 19.04, $p < 0.001$). No other effects on financial mistake were significant (p's > 0.636).

Finally, participants in the nondrip condition (M = 5.72, SD = 0.96) were significantly more satisfied with their final choice than were those in the drip condition (M = 5.29, SD = 1.16; $F(1, 801) = 31.89$, $p < 0.001$). We also found that participants in study 1a (M = 5.61, SD = 1.06) were significantly more satisfied with their final choice than were those in study 1b (M = 5.40, SD = 1.10; $F(1, 801) = 7.83$, $p = 0.005$). But, as with all the prior analyses, the interaction was not significant ($F(1, 801) = 0.08$, $p = 0.779$).

4.2.5. Discussion. The results of study 1b replicate all of the findings from study 1a. This fact, along with the results of the analyses of the combined data set, increases our confidence that the observed effects of drip pricing manifest when consumers have free choice regarding which optional add-ons to include in their purchase. Although we did observe a few small differences between the studies in terms of the likelihood to restart search, to ultimately select the lower base fare option, and in satisfaction, none of the surcharge presentation by study dummy coefficients were significant, suggesting that, overall, the impact of drip pricing on consumers' reactions did not depend on specific design factors of these studies.

One limitation of both study 1a and study 1b was that, by design, and given the specific prices we used for the base fares and the add-ons, for most participants choosing the lower base option was inherently ultimately more expensive than the higher base option and, thus, a financial mistake. Although our primary interest is exactly these types of situations—specifically, ones in which a firm strategically sets its base prices to appear cheaper than a competitor—our design does not allow us to determine whether the other effects of drip pricing (i.e., the effects on market share for lower base price options and satisfaction) generalize to contexts in which choosing the lower base option is not necessarily a financial mistake. To provide some insight into this, we ran a follow up study that is reported in the online appendix. Specifically, in web study 1, we used the same incentive compatible procedure as we did in study 1a, but we varied the magnitude of the difference in base prices between the two flight options such that in some conditions choosing the lower base fare airline and selecting add-ons would no longer be a financial mistake for most participants. The detailed findings are reported in the online appendix, but overall, we found a similar pattern of results as in these first two studies such that exposure to drip pricing led participants to be more likely to initially and ultimately select a lower base fare option. Drip pricing also led participants to be more likely to make a financial mistake, except when the price difference between the lower and the higher base fare option was such that choosing the lower base fare option did not end up being a financial mistake even when add-ons were included. Finally, drip pricing led participants to be relatively dissatisfied with their selection, even when their choice ended up being less expensive. This suggests that consumers may react negatively to drip pricing even when it does not make them economically worse off. Overall, the findings from this follow-up study suggest that our initial findings generalize beyond the specific prices and price differences employed.

The next study attempts to replicate the findings from the first two studies using a choice in a different domain (hotels), a different participant population (university participant pool), a different incentive compatible design, and completely free choice regarding all possible add-ons.

5. Study 1c

5.1. Methods

5.1.1. Participants and Design. The study was completed by 93 subject pool members at a large business school in the Northeast (40.4% female, $M_{Age} = 34.24$, $SD_{Age} = 15.10$). Participants were paid $20 for completing this and several other unrelated studies in

an hour-long session. Participants were randomly assigned to either the drip or nondrip surcharge presentation condition in a two-cell between-subjects design.

5.1.2. Procedure. Participants were informed that they would make a choice and that one randomly selected participant would actually receive his or her choice. Participants read that they had decided to take a staycation in their local city, that they needed to book a hotel room for the staycation, that the budget for the staycation was $350, and that any money not spent on the hotel could be used for food and other activities. Participants were then presented with two hotel options (which were actually two different descriptions of the same hotel) and were told that the room rate (including all taxes and mandatory fees) was $239 for one hotel and $227 for the other hotel and that additional fees for optional add-ons may apply for the one with the lower room rate.

The prices of the optional add-ons were based on the actual prices for these amenities at the hotel and were designed such that, if at least one was selected, the lower room rate hotel would ultimately be more expensive than the higher room rate hotel, to again mirror real world contexts in which one firm strategically sets its base prices to be lower than that of a competitor. A pretest with a separate sample of 201 participants from the same population revealed that 99.0% selected at least one of these optional add-ons and that 94.7% of those who ultimately selected the lower room rate option selected at least one optional add-on (making it more expensive than the alternative).

Before making their hotel choice, participants were reminded that a randomly selected participant would receive a gift card for his or her hotel choice that could be used at his or her convenience. They were also told that the selected participant would receive a Visa gift card for any money remaining in his or her budget ($350) not spent on the hotel, which could be used for other expenses during the staycation. (Although not explicitly mentioned, it could actually be used at any time, not just during the staycation.) Thus, the selected participant would receive $350 in total value, regardless of his or her choice, with more or less being spent on the hotel, depending on his or her choices.

After making their hotel choice, participants selected any optional add-ons that they wanted. (There were no additional fees for these options for the hotel with the higher room rate.) Participants were then presented with the total price including all add-ons and were given the opportunity to either start over or complete their purchase. Finally, participants completed a customer satisfaction survey that measured their choice satisfaction. This survey contained the same questions as in studies 1a and 1b—as well as the other questions presented in Section 2.3.

5.2. Results and Discussion

5.2.1. Hotel Choice. As predicted, participants in the drip condition (31.9%) were significantly more likely to initially select the hotel with the lower room rate than were those in the nondrip condition (6.5%; B = 1.88, SE = 0.68, Wald = 7.78, $p = 0.005$). No participants decided to start over when given the opportunity to do so. Thus, surcharge presentation (nondrip versus drip) did not affect the decision to start over or not, and the ultimate hotel choices were identical to the initial choices.

5.2.2. Percentage Making Financial Mistake. Significantly more participants in the drip (27.7%) than in the nondrip condition (6.5%) selected the more expensive option given the chosen optional add-ons (B = 1.70, SE = 0.68, Wald = 6.25, $p = 0.012$).

5.2.3. Downstream Consequences—Overall Satisfaction. An exploratory factor analysis (with varimax rotation) found that the three new satisfaction items and the index used previously all loaded onto a single factor (eigenvalue = 2.38, 59.4% of the variance explained). We therefore averaged all seven items to create a measure of participants' overall choice satisfaction ($\alpha = 0.74$). Although there was no significant main effect of surcharge presentation on satisfaction ($M_{Drip} = 5.73$, SD = 0.99 versus $M_{Nondrip} = 5.84$, SD = 0.92; $t(91) = 0.58$, $p = 0.563$), as with studies 1a and 1b, a mediation analysis (Iacobucci 2012) revealed a significant indirect effect of surcharge presentation on satisfaction through ultimate hotel choice ($Z_{Mediation} = -2.21$, $p = 0.027$). Thus, surcharge presentation (drip versus nondrip) influenced hotel choice, which, in turn, influenced satisfaction. Indeed, participants who selected the lower base rate hotel were significantly less satisfied (M = 5.06, SD = 1.03) than were those who selected the higher base rate one (M = 5.96, SD = 0.86; $t(90) = 3.84$, $p < 0.001$).

5.2.4. Discussion. Using a different context, participant population, and incentive-compatible procedure, as well as with completely free choice regarding add-ons, we largely replicated the findings of studies 1a and 1b. It is notable that, in this study, none of the participants started over when given the opportunity to do so. Although this is consistent with our account that initial selections are sticky, it is possible that, because we used a lottery to ensure incentive compatibility in this study, participants did not feel enough incentive to restart search. For that reason, we use the incentive-compatible payment method employed

in study 1a going forward. Now that we have provided strong support for these core findings and their robustness, the next studies examine why drip pricing has these effects even though full price information is provided prior to final choice, and consumers can restart search in the face of this information.

6. Study 2

The results from study 1a suggest that many in the drip condition who initially selected the lower base price option did not start over because they believed that the search costs of starting over outweighed any potential financial savings. Therefore, the goal of this study is to directly examine whether reducing the search costs associated with restarting search to learn the price of the alternative option increases participants' likelihood of starting over. Although the prices for both options were presented at the start of the study, it is possible that, after selecting one, participants would not be able to remember the price of the other option. They would therefore have to engage in a new search to determine the price of the other option. If false beliefs about how long it would take to conduct a new search help to explain why restart rates are low, then an intervention that reduces these costs should increase the percentage of participants exposed to drip pricing who decide to start over after initially selecting the lower base fare airline. This, in turn, should reduce financial mistakes and increase choice satisfaction.

6.1. Methods

6.1.1. Participants and Design. Eight hundred five mTurk workers (57.5% female, $M_{Age} = 38.42$, $SD_{Age} = 11.94$) completed this study for $1.00 plus a potential bonus (the same as in study 1a). Participants were randomly assigned to one of four conditions in a 2 (optional surcharge presentation: drip, nondrip) × 2 (alternative airline's price: absent, present) between-subjects design.

6.1.2. Procedure. The procedure for this study was identical to that of study 1a except for one major difference. Specifically, when participants in the alternative airline's price present condition were asked whether they wanted to complete their transaction or start over, they were shown the alternative airline's base fare (along with the final total price for their chosen airline). Thus, participants who selected the higher base fare airline were reminded that the alternative option "had a base price of $194, but additional baggage and seat fees may apply," whereas those who selected the lower base fare airline were reminded that the alternative option "had a base price of $239, which included all baggage and seat fees." Participants in the alternative airline's price absent condition only saw the final total price for their selected airline.

6.2. Results and Discussion

6.2.1 Airline Choice. There was a significant effect of surcharge presentation on initial choice (B = 1.89, SE = 0.29, Wald = 42.08, $p < 0.001$). Participants in the drip condition (38.1%) were significantly more likely to initially select the lower base price airline than were those in the nondrip condition (8.3%). Note that participants made their initial airline choice prior to the search cost intervention.

Few participants (16.5%) decided to start over when given that opportunity. Surcharge presentation had a significant effect (B = 1.38, SE = 0.33, Wald = 17.39, $p < 0.001$), with a greater percent of participants in the drip condition (26.6%) starting over than in the nondrip condition (6.8%). This effect was mediated by initial airline choice ($Z_{Mediation} = 7.16$, $p < 0.001$; Iacobucci 2012). Whereas only 5.5% of participants who selected the higher base airline started over, 53.8% of those who selected the lower base airline started over. In addition, although there was no significant main effect of the intervention and no significant interaction (p's > 0.425), we examined whether the intervention had an effect among participants in the drip condition who initially selected the lower base fare airline. The intervention did have a significant effect (B = 0.66, SE = 0.34, Wald = 3.86, $p = 0.049$) such that participants shown the higher base fare airline's price were more likely to start over (63.1%) than were those who were not given this information (47.0%). In contrast, in the nondrip condition, for those who initially selected the lower base airline, there was no effect of the intervention on likelihood to start over (intervention absent: 44.4% started over versus intervention present: 43.8% started over; $p = 0.968$).

Next, we examined participants' ultimate airline choices. Only the effect of surcharge presentation was significant (B = 1.46, SE = 0.33, Wald = 19.32, $p < 0.001$; all other p's > 0.250). Even after having the opportunity to switch their airline choice, participants in the drip condition (19.3%) were significantly more likely to select the lower base fare airline than were participants in the nondrip condition (6.8%). Moreover, although the main effect of the intervention was not significant, a subsequent analysis revealed that, among participants in the drip condition who initially selected the lower base fare airline, those who were not exposed to the intervention (57.6%) were significantly more likely to ultimately choose that airline than were those who were exposed to the intervention (38.6%; B = −0.77, SE = 0.34, Wald = 5.27, $p = 0.022$). In contrast, in the nondrip condition, among those who initially selected the lower base fare airline, we found that the intervention had no effect on which airline was ultimately

selected (intervention absent: 58.8% selected lower base airline versus intervention present: 62.5% selected lower base airline; $p = 0.829$).

6.2.2. Percentage Making Financial Mistake. Significantly more participants in the drip (10.7%) than in the nondrip condition (5.6%) selected the airline option that, given the optional add-ons selected, was more expensive (B = 1.21, SE = 0.38, Wald = 10.40, $p = 0.001$). This significant effect of surcharge presentation was qualified by a significant interaction (B = −1.11, SE = 0.55, Wald = 3.99, $p = 0.046$). Specifically, when the intervention was absent, participants in the drip condition (15.2%) were significantly more likely to make a mistake than were those in the nondrip condition (5.1%; $p = 0.001$). However, when the intervention was present, participants in the drip condition (6.9%) were no more likely to make a mistake than were those in the nondrip condition (6.2%; $p = 0.795$). Finally, among participants in the drip condition who initially selected the lower base fare airline, those exposed to the intervention (16.0%) were significantly less likely to make a mistake than were those who were not exposed to the intervention (39.4%; $p = 0.002$). In contrast, for those in the nondrip condition who initially selected the lower base fare airline, exposure to the intervention had no effect on whether they ultimately made a financial mistake or not (intervention absent: 47.1% made financial mistake versus intervention present: 56.3% made financial mistake; $p = 0.598$).

6.2.3. Downstream Consequences—Overall Satisfaction. Only surcharge presentation had a significant effect on the satisfaction index ($\alpha = 0.71$; $F(1, 783) = 23.92$, $p < 0.001$; all other F's < 0.75, all other p's > 0.385). Participants in the nondrip condition (M = 5.84, SD = 1.02) were significantly more satisfied with their final airline choice than were those in the drip condition (M = 5.48, SD = 1.09). We again found a significant indirect effect of surcharge presentation on choice satisfaction through ultimate airline choice ($Z_{Mediation} = -4.65$, $p < 0.001$), indicating that whether the surcharges were dripped affected ultimate airline choice, which in turn affected satisfaction. Indeed, participants who ultimately selected the lower base fare airline reported being significantly less satisfied with their choice (M = 4.49, SD = 1.27) than were those who ultimately selected the higher base fare airline (M = 5.84, SD = 0.92; $t(785) = 13.06$, $p < 0.001$).

Although the effect of the intervention was not significant, we did find that, among participants in the drip condition who initially selected the lower base fare airline, those who were exposed to the intervention (M = 5.37, SD = 1.32) were marginally more satisfied than those who were not exposed to the intervention (M = 4.98, SD = 1.25; $t(147) = 1.83$, $p = 0.070$). This effect was also mediated by ultimate airline choice ($Z_{Mediation} = 2.15$, $p = 0.032$).

6.2.4. Discussion. The results of study 1a suggested that one reason why drip pricing affects consumers is because they believe the costs associated with switching are substantial. Therefore, in this study, we reduced the costs associated with resuming search to learn about the price of the alternative option by presenting the alternative airline option's price when the total price of the chosen airline was revealed and at the moment at which participants had the opportunity to start over. This intervention increased participants' likelihood to start over and select a different option, decreased their likelihood of making a financial mistake, and led to marginally higher satisfaction. These findings support our contention that consumers base their start-over decisions in part on the perceived search costs associated with starting over. Note that although we attribute the findings to a reduction in search costs, the results of this study may also reflect the benefits side of the equation. If participants inaccurately recalled the price of the alternative option that was initially not selected, they may falsely believe that there was not much to be gained in terms of financial benefits by resuming search. By providing information regarding the price of the nonselected option at the time of the start-over decision, we may have informed participants that there was more to be gained by restarting than they had thought. That said, this scenario is still consistent with our overall cost-benefit account for why consumers do not generally start over.

In addition to search costs, there may also be costs that are more psychological in nature that impact the decisions of those exposed to drip pricing. For example, self-justification processes may make consumers reluctant to start over, as they may convince themselves that they have made a good choice to avoid the costs associated with accepting that they made a mistake. We examine this possibility in the next study.

7. Study 3

Prior research has shown that people are more likely to persist with an initial suboptimal decision if they made that decision themselves, but not if others made the initial decision (Staw 1976, Staw and Fox 1977, Staw and Ross 1978). To test the possible role of self-justification in our drip pricing context, one group of participants completed the standard choice and add-on selection process used in our previous studies, whereas a second group merely observed another consumer going through that same process and making the same choices. We reasoned that if

self-justification was operating, participants exposed to drip pricing who selected the lower base fare option (which tends to ultimately be more expensive and relatively unsatisfactory) for themselves would rate this decision more positively than those who observed the same choice made by another individual, because participants simply observing the choice should feel little need to justify it.

7.1. Methods

7.1.1. Participants and Design. Four hundred two mTurk workers (49.5% female, $M_{Age} = 35.73$, $SD_{Age} = 11.53$) completed this study for $1.00. Participants were randomly assigned to one of four conditions in a 2 (optional surcharge presentation: nondrip, drip) × 2 (perspective: self, other) between-subjects design.

7.1.2. Procedure. We used the same airline scenario as in studies 1a and 2, except that participants were not given the option to start over. Those in the self-perspective condition completed the standard airline choice and add-on selection procedure. Participants in the other-perspective condition were presented with the same scenario, but instead observed the choices of another person named "Alex." On each screen in the study, they were presented with what Alex saw and decided. We designed Alex's choices to reflect the modal initial choices we observed in study 1a for that condition (i.e., in the drip condition, the lower base fare airline; in the nondrip condition, the higher base fare airline). In this study, to ensure equivalent comparisons across perspective conditions, we told all participants in the self-perspective condition to select the options to bring a carry-on bag and to select a seat, for both legs of the trip, which made the lower base fare option ultimately more expensive than the higher base fare option. For those in the other-perspective condition, they watched Alex select these same options.

Next, participants responded to a series of questions—similar to the satisfaction questions used in prior studies—designed to assess their level of satisfaction with their choice or Alex's choice ($\alpha = 0.97$). See the online appendix for the specific items.

7.2. Results and Discussion

7.2.1. Airline Choice. Among participants in the self-perspective condition, those in the drip condition were more likely to select the lower base fare airline (66.4%) than were those in the nondrip condition (16.8%; $p < 0.001$), which replicates our previous studies.

7.2.2. Overall Satisfaction Regarding Choice. Because in the other-perspective condition Alex only selected the higher base fare airline in the nondrip condition and the lower base airline in the drip condition, to make the responses to the satisfaction questions across the perspective conditions comparable, in the self-perspective condition, for this analysis, we excluded those participants in the nondrip condition who selected the lower base airline ($n = 17$) and those in the drip condition who selected the higher base airline ($n = 35$). However, the results are virtually identical (and actually stronger) when these responses are included. There were significant effects of surcharge presentation ($F(1, 346) = 305.48$, $p < 0.001$) and perspective ($F(1, 346) = 11.44$, $p = 0.001$) on satisfaction. These main effects were qualified by a significant interaction ($F(1, 346) = 5.76$, $p = 0.017$). In the nondrip condition, participants in the self-perspective ($M = 5.90$, $SD = 1.04$) and other-perspective ($M = 5.75$, $SD = 1.39$) conditions did not differ in their choice satisfaction ($F(1, 346) = 0.52$, $p = 0.473$). In contrast, in the drip condition, participants in the self-perspective condition felt significantly more satisfied with the choice ($M = 3.48$, $SD = 1.94$) than those in the other perspective condition ($M = 2.55$, $SD = 1.52$; $F(1, 346) = 15.72$, $p < 0.001$), consistent with a self-justification account.

7.2.3. Discussion. The results support the idea that psychological costs help explain how people respond to drip pricing. Those who made a bad decision in the face of drip pricing seem to justify their decisions to avoid the psychological costs associated with admitting one has made a bad decision, by convincing themselves that their price was satisfactory (consistent with participants' self-reports from study 1a). Taken together, the results from the last two studies provide support for the idea that perceived costs (i.e., search and psychological) help explain why consumers do not start over in the face of drip pricing.

In the next study, we turn to the other side of the cost-benefit equation, namely, perceived benefits. Recall that in study 1a participants in the drip condition who selected the lower base fare airline and did not start over stated that they believed that most airlines tend to charge extra for baggage and other add-ons and that the prices for these optional add-ons tend to be similar across airlines. As a result, they likely felt that starting over offered little benefit. Consequently, in the next study, we directly manipulate this belief (through providing information about whether surcharges tend to be similar or different for firms in an industry) and thereby the perceived benefit of starting over.

The next study also addresses a potential limitation of all of the earlier studies. Specifically, it is possible that our findings may be due, in part, to participants misunderstanding the surcharge disclosures we used in all of the studies. Specifically, in the drip pricing condition, there was always an asterisk only next to

the lower base price option to indicate that additional fees may apply for this option (but not the higher base option). It is possible that this disclosure was too subtle and either went unnoticed or was misinterpreted to mean that additional fees may apply for both options. It is also possible that some participants may have thought that the higher base option could still charge extra for add-ons even if it did not indicate that possibility through an upfront disclosure. Therefore, in this study, we provided information about what was and was not included in the base price up front. As in study 1c, we also again moved back to the hotel context to ensure that our findings generalize beyond airlines.

8. Study 4

8.1. Methods

8.1.1. Participants and Design. Four hundred mTurk workers (48.4% female, $M_{Age} = 36.23$, $SD_{Age} = 11.90$) completed this study for $1.00 plus a potential bonus (similar to that used in studies 1a and 2). Participants were randomly assigned to one of four conditions in a 2 (optional surcharge presentation: drip, nondrip) × 2 (information: similar surcharges, different surcharges) between-subjects design.

8.1.2. Procedure. Participants read an excerpt from a fictitious news article in which we made salient whether all firms within an industry tend to charge similar fees for optional add-ons. In the similar (different) information condition, the news article stated that if consumers encounter a fee from one airline service provider, they should (should not) assume that all airlines charge similar fees. After reading this excerpt, participants completed a neutral filler task (Srull and Wyer 1979).

Participants then completed the focal choice task in which they had to choose between two hotels—a lower and a higher base price option. The former charged extra for optional add-ons, whereas the latter did not. This was indicated by an asterisk next to the price of the lower base price option, which informed participants that additional fees may apply for that option. Notably, next to the base price of the higher base price option was a note that this base price included access to the pool, gym, and spa; a breakfast buffet; Wi-Fi; and self-parking.

After making their hotel choice, selecting add-ons (in this study, participants only saw the total hotel price—with the price of the selected add-ons included—after the add-on selection process had been completed), deciding whether to start over or not, and completing the customer satisfaction survey (α = 0.81), participants indicated their level of agreement with two statements that served as manipulation checks: "The extra fees that hotels charge are pretty much the same for all hotels" (1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree) and "The additional fees that companies charge are pretty much the same for all companies within an industry" (−3 = strongly disagree, +3 = strongly agree). Because participants' responses to these two items were highly correlated (r = 0.66), we averaged them to create a composite manipulation check variable (α = 0.93).

8.2. Results and Discussion

8.2.1. Hotel Choice. The effect of surcharge presentation was significant (B = 1.49, SE = 0.52, Wald = 8.23, p = 0.004). Participants in the drip condition (21.5%) were significantly more likely to initially select the lower base price hotel than were those in the nondrip condition (7.5%). Neither the main effect of information (p = 0.244) nor the interaction (p = 0.524) was significant.

Overall, across conditions, very few participants decided to start over (8.3%). A binary logistic regression of surcharge presentation, information, and their interaction on starting over revealed no significant effects on likelihood to start over (p's > 0.370).

Looking at final choices (i.e., including those who switched from their initial choice), we found that a larger percent of participants in the drip condition ultimately selected the lower base hotel (21.1%) than did those in the nondrip condition (8.6%; B = 1.13, SE = 0.46, Wald = 6.02, p = 0.014). No other effects were significant (p's > 0.525). Thus, explicitly informing participants that the optional surcharges that firms charge can vary across firms—as well as making this fairly clear when the base prices were presented—was not enough to reduce choice of the lower base rate hotel (which charged additional fees for optional add-ons) among those exposed to drip pricing.

8.2.2. Percentage Making Financial Mistake. Significantly more participants in the drip condition (11.2%) than in the nondrip condition (5.1%) selected a hotel option that, given the optional add-ons selected, was more expensive (B = 1.59, SE = 0.79, Wald = 4.06, p = 0.044). Participants in the different surcharges condition (10.3%) were marginally more likely to make a mistake than were participants in the similar surcharges condition (6.1%; B = 1.37, SE = 0.80, Wald = 2.88, p = 0.090). There was no significant interaction (p = 0.269).

8.2.3. Ultimate Hotel Choice Mediated by Beliefs About Hotel Surcharges. Although there was no effect of the information manipulation on consumers' choices, the manipulation itself was successful. A two-way ANOVA of surcharge presentation, information, and their interaction on the manipulation check

variable revealed a significant main effect of information ($F(1, 395) = 4.46$, $p = 0.035$). Participants in the similar surcharges condition (M = 3.80, SD = 1.55) were significantly more likely to agree that the surcharges that firms charge are similar across firms than were participants in the different surcharges condition (M = 3.44, SD = 1.63). Interestingly, though, there was also a significant main effect of surcharge presentation ($F(1, 395) = 4.14$, $p = 0.043$) and a significant interaction ($F(1, 395) = 4.28$, $p = 0.039$). The information manipulation had no effect on participants' beliefs in the nondrip condition ($M_{Similar} = 3.45$, $SD_{Similar} = 1.56$ versus $M_{Different} = 3.45$, $SD_{Different} = 1.70$; $p = 0.977$), perhaps because these participants had full information about the hotel add-on prices and relied on this information in forming their beliefs. However, it did have a significant effect in the drip condition (in which people lacked detailed surcharge information prior to going through the add-on selection process) such that participants in the similar surcharges condition (M = 4.10, SD = 1.49) were significantly more likely to agree that firms within an industry have similar surcharges than were those in the different surcharges condition (M = 3.44, SD = 1.56; $F(1, 395) = 8.74$, $p = 0.003$). Despite the fact that the manipulation worked as intended to affect these participants' beliefs, it did not affect their choices or likelihood to restart.

Interestingly, we also found that participants who ultimately selected the lower base hotel (M = 4.69, SD = 1.44) were significantly more likely to hold the belief that surcharges are similar across competitors than were those who ultimately selected the higher base hotel (M = 3.43, SD = 1.55; $t(395) = 5.78$, $p < 0.001$). We therefore examined whether this belief could help explain participants' hotel choices. Using the PROCESS Macro for SPSS (Model 4; Hayes 2013) and a bootstrap sample $n = 5{,}000$, we found that the indirect effect of surcharge presentation on ultimate hotel choice through consumers' beliefs about surcharges was significant (B = 0.20, SE = 0.10, CI (95%) = [0.04, 0.44]), as the 95% confidence interval excluded zero (Hayes and Preacher 2014). Thus, beliefs about surcharges do seem to help explain consumers' choices. It is not clear, though, why our manipulation was not sufficient to change choices as it changed beliefs.

8.2.4. Downstream Consequences—Overall Satisfaction.

Participants in the nondrip condition were marginally more satisfied with their choice (M = 5.71, SD = 1.04) than were those in the drip condition (M = 5.54, SD = 1.10; $F(1, 395) = 2.87$, $p = 0.091$). No other effects were significant (p's > 0.290). The effect of surcharge presentation on overall satisfaction was mediated by ultimate hotel choice ($Z_{Mediation} = -3.17$, $p = 0.002$). Indeed, we again found that participants who ultimately selected the lower base price hotel were significantly less satisfied with their choice (M = 4.58, SD = 1.07) than were those who ultimately selected the higher base price hotel (M = 5.82, SD = 0.95; $t(395) = 9.06$, $p < 0.001$).

8.2.5. Discussion.

Study 4 replicates and extends our previous findings. Once again, we find that drip pricing leads participants to be more likely to choose the lower base price option and to make mistakes by selecting more expensive, relatively unsatisfactory options. In addition, we again find that this choice can be difficult to change. Indeed, explicitly informing participants that the additional fees that firms charge vary within an industry had no effect on the hotel that participants ultimately selected. However, we did find that participants who ultimately selected the lower base price option were more likely to believe that all firms assess the same surcharges than were those who ultimately selected the higher base price option and that the effect of surcharge presentation on ultimate hotel choice was mediated by those beliefs, despite the disclosures provided. Thus, consistent with participants' self-reports in study 1a, one reason consumers exposed to drip pricing are more likely to ultimately select the lower base rate option—even when it is ultimately more expensive than originally anticipated and just as expensive as or more expensive than the higher base rate option—may be because they incorrectly believe that all firms charge similar surcharges, and therefore, there is little benefit to be gained by switching. It is worth noting that this belief appears to persist even though we explicitly indicated both that only the lower base rate option may have additional surcharges and, in this study, explicitly mentioned that the higher base rate option included the optional add-ons in its base price. Thus, this false belief may reflect a form of self-justification, similar to that demonstrated in study 3, whereby those who chose the lower base price option form and hold onto this belief to avoid having to admit that they may have made a mistake.

Overall, across the studies in this block that explored process, it appears that consumers' responses to drip pricing are multiply determined—driven by the perceived costs and benefits of starting over. These factors, in combination, cause drip pricing to harm consumers—leading to purchases that are more expensive than necessary and relatively unsatisfactory.

9. General Discussion

This research has two goals: (1) to demonstrate the effect of dripping optional surcharges on consumer choice and satisfaction and (2) to examine why drip pricing leads consumers to be more likely to ultimately choose a lower base price option, even when it

is more expensive in total than the alternative, they could save money by switching, and they are relatively dissatisfied with their choice. We examine these questions in situations in which firms strategically set base prices below those of their competitors but structure the prices of optional add-ons such that, once commonly selected add-ons are chosen, they ultimately end up costing more than the higher base price alternatives.

Across six studies, we find that drip pricing (versus nondrip pricing) increases the likelihood that consumers will both initially and ultimately select a lower base price option, even though the surcharges for optional add-ons cause this base price to balloon—making the lower base fare option more expensive than the alternative—and they are relatively dissatisfied with the choice. Moreover, we found evidence that consumers' reluctance to start over and change their initial decision can be attributed to their misperceptions regarding the relative costs and benefits of switching. We show that the effects are driven by the perceived time (study 2) and psychological (study 3) costs of starting over, as well as incorrect beliefs about the potential benefits to be gained by restarting due to beliefs about the similarity of surcharges across firms (study 4).

Given that drip pricing is of high interest to regulators, it is important to consider these results in the context of current and proposed law. Regulators argue that drip pricing is a deceptive pricing practice that increases consumers' financial and search costs. Our results provide support for these presumed financial and search costs, and they also show that there are psychological costs to consumers as well. Therefore, the current regulatory requirements, although limited to mandatory surcharges, are a step in the right direction. However, given the sizable revenue that firms derive from surcharges for optional add-ons and, as this research has demonstrated, the effects such surcharges have on consumers, expanded regulations may be needed. Indeed, our results showed that, when prices for optional add-ons were dripped, participants were consistently more likely to choose the lower *base* price option. However, given the optional add-ons involved and their prices, the lower *base* price option might *ultimately* be more expensive than the alternative, resulting in a financial mistake for consumers.

Firms have argued that drip pricing is not deceptive or harmful because consumers are always provided with total price information before they make their final purchase and are often provided with disclosures indicating that additional fees or surcharges may apply. However, as shown across our studies, simply providing the total price to consumers prior to when they complete their purchase does not eliminate the harm that drip pricing can cause consumers. Indeed, even though, in every study, we presented participants with the total price of their selection prior to them completing their transaction (and, in some cases, also presented running totals throughout the process), participants exposed to drip pricing were still significantly more likely to ultimately choose the lower base price option, make a financial mistake, and be relatively dissatisfied with their selection than were those in the nondrip condition. In every study we also provided disclosures that additional fees may apply—and even made them more explicit in study 4—but we still found that those disclosures were insufficient at eliminating the harmful effects of drip pricing.

Firms also have argued that consumers prefer drip pricing because it allows them to only select the add-ons of interest to them and to minimize their total payment. However, it is important to note that firms can still use add-on pricing but disclose the add-on pricing up front—indeed, that was the exact situation for the lower base price option in the nondrip condition of every study. Moreover, consumers may state that they prefer forms of price disclosure that lead them to make financial mistakes, because they may not realize the effects of these forms of disclosure. For example, White et al. (2019), in a different context not involving drip pricing, showed that consumers state a preference for more complex fee disclosures, believing that they provide more transparency. However, these more complex fee disclosures lead them to make financial mistakes by choosing more expensive options.

In addition, although not a focus of our inquiry, experience may not be sufficient to avoid the harmful effects of drip pricing (Blake et al. 2018). Indeed, an additional analysis of the study 1a data revealed that previous flying experience did not moderate the effects of drip pricing. (Results are available from the authors upon request.) In another study, we allowed participants to make two decisions separated by time (i.e., two one-way flight decisions), and we found that experience in the first decision did not fully eliminate the negative consequences of drip in the second decision. (Full details are available from the authors upon request.) Thus, this research highlights the need for regulators to protect consumers from the pernicious effects of drip pricing. Study 2 suggests that interventions that reduce the search costs involved with drip pricing and those that make it easier to compare prices may be particularly helpful in terms of protecting consumers.

It is also worth noting that, even in the nondrip condition, in which participants had complete pricing information (but the add-on prices for the lower base option were still partitioned from the base price),

some participants chose the lower base option even when it ended up ultimately being more expensive. Thus, a few participants in the nondrip condition made a financial mistake, selecting the more expensive option. This finding is consistent with the partitioned pricing literature (Morwitz et al. 1998, Greenleaf et al. 2016), which suggests that consumers may anchor on the base price and underestimate the total price. Thus, whereas disclosing fees up front is better than dripping them, it is not sufficient for eliminating mistakes, and regulations concerning partitioned pricing may also be needed, especially for add-on options that are considered important or necessary by most consumers.

Of course, the current research, like all research, has limitations. First, our studies provided highly stylized and limited information about the choice options, and the studies were confined to online and laboratory settings with paid participants who were relative novices. Although most of our studies were consequential, having data on search and payment from actual transactions in a field experiment would bolster our findings. Second, this research focused on the dripping of optional surcharges, given the recent debate around whether to expand current regulations to include such fees. However, there is also a debate concerning rolling back the existing regulations on mandatory surcharges, and this research does not explore the implications of such a change in policy. Although some prior research demonstrates the adverse effects of dripping mandatory fees (Sullivan 2017, Blake et al. 2018), research on this is limited, so more work is needed. Third, in all of our studies, participants were limited to two choice options, and consumer behavior may be different when there are more options to consider. Fourth, we did not provide product information about the options beyond price, and the effect of drip may depend on tradeoffs between price and other attributes, such as quality, or characteristics of the firm, such as reputation. Cheema (2008) demonstrated that firm reputation moderated the effect of surcharges on willingness to pay and purchase timing. Although we did not experimentally vary firm reputation in our studies, it may play a role in how consumers react to drip pricing. Fifth, we primarily focused on surcharges that are dripped before the total is paid, but in many real world situations, add-on options are offered and their prices dripped after the consumer has already paid for the base product (e.g., mini-bar charges at a hotel), and the effect of drip might differ in these cases. Sixth, in order to be conservative, in all of our studies, surcharge prices were fully revealed (either up front or during the drip process) versus being hidden in small print or embedded in unrelated information. The impact of drip might differ when surcharges are hidden. Finally, given that this research was focused on establishing a baseline understanding of how consumers react to drip pricing, we did not examine individual differences that may explain variations in reactions to drip pricing, such as knowledge, financial literacy, or comfort with numerical information. For example, economists refer to the differential effects of drip pricing on "sophisticates" and "naives" (Gabaix and Laibson 2006) or "rational" actors. Future research should address these limitations.

Given that the effects we observed seem to be multiply determined, future research should also explore other potential explanations. Beyond the explanations we identified, another possibility is that, after investing time in making an initial decision, participants may stick with their choice because of sunk cost effects or escalation of commitment (Staw 1976). We tested for possible escalation effects in another study not reported here, in which participants were given total cost information and the opportunity to start over after each add-on was added. A restart pattern consistent with an escalation of commitment explanation would likely show the incidence of starting over monotonically decreasing the further the participant got into the purchasing process. Our results did not follow this pattern, but did show a decrease at the end of the process, thus providing mixed evidence for escalation of commitment. (Full details are available from the authors upon request.) Thus, more work on this is needed.

Finally, it is also possible that consumer choices and satisfaction reflect an affective forecasting error. That is, when the purchase process begins, consumers may (erroneously) predict that they will not want the optional add-ons and would be happier with a low price. However, as they progress through the purchasing process, the attractiveness of the optional add-ons increases and consumers therefore end up purchasing them in contrast to their earlier predictions. This is an interesting possibility that should be explored in future research.

In closing, we hope that this research can be used to inform the current debates regarding the value of existing regulations around drip pricing as well as the proposed expansion of such rules (Silk 2017, NCL Communications 2019, Sampson 2019). Our results show that existing regulations are not sufficient for protecting consumers when firms that have higher total prices strategically set their base prices lower than competitors and then drip surcharge information. We believe that efforts to roll back the existing regulations regarding the dripping of government fees and taxes in the airline industry (Elliott 2014a, b) is concerning given our findings and prior research on dripping mandatory surcharges that shows that consumers pay more and search less when such pricing practices are used (Sullivan 2017).

In contrast, our results suggest that expanding current regulations by requiring airlines to disclose baggage and seat fees up front could benefit consumers and airlines alike. Indeed, participants in our studies were disproportionately more likely to select the higher base price option, be less likely to make a mistake, and be more satisfied with their selection when surcharges for optional add-ons were provided up front. As such, fee disclosures need not pit regulators and consumers against firms.

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Endnote

[1] See http://airlineratings.com/passenger-reviews/137/spirit-airlines (accessed June 1, 2017).

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