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First experiences are highly influential. Here, the authors show that nonfirst experiences can be made to seem like firsts and, consequently, to have a disproportionate influence on judgment. In six experiments, one piece of a series of information was framed to appear to have “first” status: For example, a weather report that appeared at the end of a sequence of weather reports happened to correspond to the *first* day of a vacation, and a customer review that appeared at the end of a sequence of hotel reviews happened to be the new year’s *first* review. Such information had greater influence on subsequent judgments (e.g., of the next day’s weather, of the hotel’s quality) than identical information not framed as a first. This effect seems to arise largely because “phantom first” pieces of information receive greater weight, but not necessarily more attention, than other pieces of information.

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## Forceful Phantom Firsts: Framing Experiences as Firsts Amplifies Their Influence on Judgment

Imagine that you are going on a vacation to San Diego. You chose San Diego because you wanted a few days to relax on the beach and enjoy the sun, and everything you had heard suggested that the weather there is almost always sunny and pleasant. Now imagine that you arrive in San Diego, and on your first day, the weather happens to be miserable. It is foggy and cold, ruining your beach plans for that day. How might you react?

One possibility is that you might realize that this first day in San Diego is not your first piece of information about San Diego: You have long known that San Diego is usually sunny. This one foggy, cold day simply happens to be the

first piece of information you receive on your vacation. This dreary experience probably should not be weighted particularly heavily simply because of its timing, and you should not drastically change your views about San Diego’s weather because of it.

Although this perspective seems quite reasonable, we suggest that people do not always adopt it. Rather, we suggest that they may treat this dreary day, coinciding as it does with their arrival in San Diego, as an especially influential “first” impression. Thus, if this experience happened to you, you might believe that you have obtained a negative first impression of San Diego, and you might revise your view of San Diego’s weather accordingly, giving substantial weight to this ostensible first impression. Your expectations for the subsequent weather in San Diego might be unfavorable, all because of this experience that seems to be, but is objectively not, a first impression.

This article investigates the idea that although first impressions are important, what counts as a “first” may be subjective and malleable. We examine whether pieces of information that are not actually first pieces can be framed as firsts and consequently have the substantial effects on judgment that “true” first impressions often do.

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### THE IMPORTANCE OF FIRST EXPERIENCES

First impressions are powerful. They are quickly formed (Ambady and Rosenthal 1992), deeply encoded (Pandelaere, Millet, and Van den Bergh 2010), and firmly held (Nickerson 1998; Park 1986), and they affect many judgments and beliefs. Many studies suggest that early-encountered information has a privileged status compared with later-encountered information. For example, stimuli encountered first are often preferred to stimuli encountered later (Mantonakis et al. 2009; Pandelaere, Millet, and Van den Bergh 2010). More generally, researchers have documented primacy effects, which arise for a variety of reasons, in domains as diverse as memory (Murdock 1962; Neath 1993), impression formation (Anderson 1965; Asch 1946; Denrell 2005), social judgment (Kruglanski and Freund 1983; Srull and Wyer 1989), and probabilistic inference (Peterson and DuCharme 1967), with the general finding that first impressions and encounters have a greater influence on judgment than equivalent later impressions and encounters.

Laypeople have some sense of the importance of first impressions. Everyone, from job candidates to shampoo buyers, understands the adage “You never get a second chance to make a first impression.” People also recognize that they themselves draw strong inferences from first impressions. For example, in a pretest, undergraduate students ( $N = 166$ ) expressed a high rate of agreement with the statement “First experiences are especially meaningful to me,” providing a mean response of 5.4 ( $SD = 1.3$ ) on a seven-point scale (1 = “I completely disagree,” and 7 = “I completely agree”), a response that is significantly higher than the midpoint ( $t(165) = 14.09, p < .001$ ).

The power of first impressions partly derives from the large incremental contribution that a first experience with a target provides to a person’s knowledge about that target. Laypeople seem to recognize this as well. In a separate pretest, a sample of undergraduate students imagined eating exceptionally good ( $N = 28$ ) or exceptionally bad ( $N = 26$ ) pizza at a restaurant. They were asked whether the restaurant would be more likely to serve equally exceptional pizza in the future if this extreme experience occurred on their *first* visit to the restaurant or their *fifth*. Participants overwhelmingly expected equally exceptional pizza from the restaurant when the exceptional slice had been served on the first visit rather than the fifth, regardless of whether the pizza was exceptionally good (71% vs. 29%;  $\chi^2(1) = 5.14, p = .02$ ) or bad (88% vs. 12%;  $\chi^2(1) = 15.39, p < .001$ ). This pattern seems appropriate: the first piece of information is also the only piece of information and thus should be given substantial weight in judgment. An extreme later experience can be more easily dismissed as a fluke, unlikely to recur.

Thus, in many cases, first experiences are legitimately more important and diagnostic than later experiences, and drawing strong inferences from a first experience may be appropriate. However, we suggest that though associating “first” with “important” may be valid, this association is not always valid, and there are times when an apparent first should not disproportionately influence judgment. Indeed, whether something is coded as a first can be arbitrary, subjective, or manipulated strategically by others. Recall our opening example: the bad weather on your first day in San Diego is not the first thing you have learned about San

Diego. Although objectively, this bad weather should not be weighted particularly heavily simply because it co-occurs with a first, people may nevertheless code that weather as a first impression and treat it as especially important. After all, much prior research suggests that even generally useful associations can be activated in inappropriate situations and lead to bias (Kahneman and Frederick 2002; Tversky and Kahneman 1974). Furthermore, the robustness of primacy and order effects suggests that people give extra weight to first pieces of information in a variety of circumstances, even when doing so may not be necessary or warranted (Pandelaere, Millet, and Van den Bergh 2010). Might the idea that first impressions are important be activated too often, causing information to exert a disproportionate influence on judgment, even if it merely appears to be a first?

This conjecture is motivated by decision-making research that reveals that the identical judgment object, described in different but consequentially irrelevant ways, can elicit substantially different responses (Tversky and Kahneman 1981; for a review, see Kahneman and Tversky 2000). For example, most people consider a decision to reduce employee pay by 7% (during a time of no inflation) quite unfair, but few people find a 5% pay raise during a time of 12% inflation unfair at all, even though the 5% raise entails a 7% pay cut in real dollars (Kahneman, Knetsch, and Thaler 1986). As another example, a simple alteration of a person’s reference point can turn an apparent gain into a loss and lead to greater risk taking (Tversky and Kahneman 1981). People often accept choice problems and situations as presented, without translating one frame into another. They seem not to spontaneously notice, for example, that a choice among apparent gains can be reframed as a choice among apparent losses.

In this article, we examine whether simple framing manipulations can make a piece of information seem like, and be treated as, a first and thus have a disproportionate influence on judgment. Studies of primacy and order effects have typically manipulated the actual sequences of information to examine how the influence of a piece of information differs as a function of its actual ordinal position. However, even when holding constant the information and its sequence, we suggest that we can still adjust the extent to which a particular item in the sequence is perceived as a first. Because people may not realize the extent to which their idiosyncratic construals distort their perceptions of information (Eibach, Libby, and Gilovich 2003), they may overemphasize these “phantom firsts,” leading these firsts to have an increased impact on judgment.

In support of this suggestion, evidence shows that arbitrary boundaries and starting points can affect judgment. For example, people may make different choices when those choices are arbitrarily segregated from (vs. consolidated with) other similar choices (Redelmeier and Tversky 1992; Tversky and Kahneman 1981). Furthermore, passing even arbitrary starting points and temporal landmarks can change people’s task and goal commitment (Dai, Milkman, and Riis 2014; Zhao, Lee, and Soman 2012), and people anticipate greater change in the future when an irrelevant temporal landmark between now and the future is highlighted (Peetz and Wilson 2013). People also tend to evaluate more positively the final event in a sequence of positive experiences when that final event is explicitly labeled as

“last” (O’Brien and Ellsworth 2012). These findings suggest that people do not spontaneously notice that some boundaries and starting points are arbitrary; those arbitrary boundaries consequently affect their judgments. However, these prior studies do not indicate whether information can be framed as first information and subsequently influence judgment more heavily than it would otherwise.

We first consider whether such phantom-first effects arise, defining a “phantom first” as a nonfirst piece of information that has been framed to seem like a first. We then investigate why these effects arise. To do so, we draw on the mechanisms that research has identified as underlying primacy effects in impression formation, and we investigate whether mere framing can trigger those mechanisms. The literature on primacy effects advances at least two possible mechanisms. One is that first information receives more attention than subsequent information (Anderson and Hubert 1963; Stewart 1965). Therefore, phantom-first information may exert a disproportionate impact on judgment because it may receive a disproportionate share of attention. The other possibility is that even when attention is held constant, first pieces of information are weighted more heavily than non-first information (Anderson 1965). Thus, the increased impact of phantom firsts could instead arise because, even when all information has been attended to, phantom firsts just seem more important. This second mechanism is consistent with our suggestion that a general association of firsts with importance can be activated and influence judgment even when the firsts in question are only illusory or arbitrary firsts. We investigate these two potential mechanisms—attention and weighting—as we explore whether, when, and why otherwise mundane experiences can be framed as firsts in arbitrary, irrelevant ways.

### THE CURRENT RESEARCH

This article considers whether information framed as first information has an exaggerated influence on judgment. We examine whether phantom firsts can be created by linking information to idiosyncratic, personally relevant firsts (Experiment 1) and also to less personally relevant boundaries (Experiments 2 and 3). We predict that phantom-first information will influence judgment to a greater extent than the same information when it is not framed as a first. We explore whether both negative and positive information can be successfully framed as firsts (Experiment 3) and whether first framing can be effective when the framed information is followed by other information (Experiment 4). Finally, we examine the mechanisms underlying phantom-first effects (Experiments 4, 5, and 6).

This research contributes to the literature on framing effects by introducing a novel type of framing effect; that is, rather than manipulating whether an item is described in terms of its positive or negative attributes (for example), we reframe an item by altering the surrounding context so that it sometimes appears to be a first. This research also contributes to the literature on primacy effects and impression formation by showing that what is considered a first impression is often highly subjective and malleable. A first experience in a store, for example, is rarely a person’s first experience in *any* store, just as the first day in San Diego is likely not the first time a person has encountered information about San Diego. By showing how subtly and simply experi-

ences can be turned from nonfirsts into firsts, this article may, in turn, prompt a reconsideration of how first impressions operate.

### EXPERIMENT 1: PARIS WEATHER

Experiment 1 examines whether the influence of information can be increased by arbitrarily framing it as a first. All participants read six consecutive weather reports for Paris. The first five reports indicated good weather, and the last indicated bad weather. The bad weather happened to correspond to either participants’ sixth day of vacation or their first day of vacation. Participants then forecasted the weather for the next day. We predicted that when the bad weather could be coded as “first” weather, it would have a greater influence on participants’ impressions of future weather, even though it was the sixth piece of information received in all cases.

#### Method

Eighty-three undergraduate students at a large southeastern university participated for extra course credit. They read a scenario in which they imagined vacationing in Paris, where they had planned many outdoor activities. Each morning for six mornings, they had been monitoring Paris’s weather. Participants randomly assigned to the phantom-first condition read the following:

On each of the five days counting down to your trip, the weather in Paris is beautiful. On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It’s perfect weather for strolling the streets and gardens of Paris.

On Friday, however, you arrive in Paris for the first day of your trip, and the skies are gray, it rains all day, and the high is only 62.

In the control condition, the formatting and the information about the weather were identical, but the first five days of good weather were described as the first five days of the trip. The passage about Friday began, “On Friday, however, you wake up in Paris for the sixth day of your trip” (see Figure 1). We predicted that framing Friday’s bad weather as the weather on the trip’s first day would increase its impact on judgments about the weather.

We asked participants to estimate the probability of rain on Saturday and to predict Saturday’s high temperature. Participants also predicted the weather for the rest of the trip (1 = “miserable; completely rainy and cool,” and 9 = “beautiful; completely sunny and warm”), their need to adjust their plans for the rest of the trip (1 = “not at all; my plans will stay exactly the same”; and 9 = “completely; the rest of my vacation will be entirely different from what I planned”), and Paris’s weather in general (1 = “Paris is always cool and rainy,” and 9 = “Paris is always sunny and warm”). The Web Appendix contains the full materials for all experiments reported herein.

#### Results and Discussion

We predicted that the future weather would seem worse when the rainy weather happened to fall on the first day of

Figure 1

## EXPERIMENT 1: MATERIALS IN THEIR ORIGINAL LAYOUT

<i>A: Phantom-First Condition</i>	
Imagine that you are going on a two-week vacation to Paris. You will first arrive on Friday. You would like to spend most of your time there <b>walking around the city</b> to get to museums and restaurants, seeing the <b>gardens and monuments</b> , and <b>strolling along the river</b> , so you pay careful attention to what the weather will be like. Each morning leading up to your trip, you check the Paris weather forecast for the day, so that you know what sort of clothes to wear and what sorts of activities you'll be able to do.	
On each of the five days counting down to your trip, <b>the weather in Paris is beautiful</b> . On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It's perfect weather for strolling the streets and gardens of Paris.	
On Friday, however, you arrive in Paris for the <b>first day</b> of your trip, and the skies are gray, it rains all day, and the high is only 62.	
<i>B: Control Condition</i>	
Imagine that you are going on a two-week vacation to Paris. You arrive on Sunday. You would like to spend most of your time there <b>walking around the city</b> to get to museums and restaurants, seeing the <b>gardens and monuments</b> , and <b>strolling along the river</b> , so you pay careful attention to the weather. Each morning, you check the Paris weather forecast for the day, so that you know what sort of clothes to wear and what sorts of activities you'll be able to do.	
On each of the first five days of your trip, <b>the weather in Paris is beautiful</b> . On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It's perfect weather for strolling the streets and gardens of Paris.	
On Friday, however, you wake up in Paris for the <b>sixth day</b> of your trip, and the skies are gray, it rains all day, and the high is only 62.	

vacation. Consistent with our prediction, when the rainy day was the first (vs. sixth) vacation day, participants indicated on all measures that the subsequent weather would be worse (see Table 1). We standardized each measure, reverse-coded the standardized measures as necessary so that higher numbers indicated better weather, and averaged these measures into a composite ( $\alpha = .72$ ). As we predicted, this composite was reliably lower when Friday was the first (vs. sixth) day of the trip ( $t(81) = 2.18, p = .03, d = .47$ ).

Thus, a single weather report, described and formatted identically, had more influence on expectations of subsequent weather when it corresponded to the first day of a trip than the sixth, even though it was the sixth piece of relevant data participants encountered in both cases. These results suggest that a phantom first piece of information can be created simply by adding an irrelevant conceptual boundary.

Table 1  
EXPERIMENT 1: PREDICTED PARIS WEATHER

	<i>Framing of Friday's Rainy Weather</i>	
	<i>First Day in Paris M (SD)</i>	<i>Sixth Day in Paris M (SD)</i>
Chance of rain on Saturday (%)	49.5 (21.3)	46.5 (14.9)
Saturday's high temperature (°F)	66.9 (3.7)	68.7 (3.0)*
Sun on remainder of trip	5.6 (1.1)	6.0 (1.1)
Need to change plans for bad weather	4.8 (1.4)	4.5 (1.6)
General amount of sun in Paris	5.6 (0.9)	6.1 (1.1)*
Standardized composite	-.16 (.7)	.16 (.6)*

\* $p < .05$ .

Notes: For the standardized composite, items were recoded so that higher values corresponded to a prediction of drier, warmer weather.

That information then exerts a greater influence on subsequent judgments, just as a true first would.

## EXPERIMENT 2: HOTEL RESERVATIONS

Experiment 1 suggests that framing information as a first increases its influence on judgment, even when the reason for its first status is irrelevant to the judgment at hand. However, perhaps participants in Experiment 1's phantom-first condition treated the bad weather report differently because it was the only day for which they were (hypothetically) personally experiencing the weather. The control condition had no such imagined experiential difference between the bad weather day and the other days. Although this does not mean that there *should* have been a difference in judgments between the two conditions (because the relevance of each day to the future prediction did not change across conditions), it raises the question of whether the results were driven by framing the bad weather as a first rather than by reporting that the bad weather arrived on the only "experienced" day.

Therefore, Experiment 2 employs a different manipulation. Participants read six hotel reviews, the first five positive and the last negative. For some participants, the reviews were all posted online in 2009, including the negative review (which was posted late in 2009). For others, the negative review happened to be the first review posted in 2010. We predicted that impressions of the hotel would be less favorable when the negative review appeared as the *first* review of 2010. Thus, Experiment 2 examines whether phantom-first effects can emerge not just with personally relevant firsts but also with externally imposed, clearly arbitrary firsts.

## Method

Two hundred twenty-two undergraduate students at a large southeastern university participated for extra course credit. Participants were randomly assigned to read one of two sets of hotel reviews, designed to resemble reviews posted on a website. In both conditions, the dates of the reviewers' visits and when they posted the reviews were listed, along with the reviewers' usernames, hometowns, and brief statements about their stays. The first five reviews were positive, giving overall ratings of four or five stars and ratings of eight to ten (of a possible ten) for the hotel's value, location, and cleanliness. The sixth review was markedly negative, giving an overall rating of one star and ratings of four, six, and three for value, location, and cleanliness, respectively.

We varied the posting date of the final review to manipulate whether it could be considered a first review. In the phantom-first condition, the first five positive reviews were posted under the heading "Reviews Submitted in 2009." These reviews were numbered from 71 to 75, and ellipses preceded Review 71 to indicate that there were other reviews not shown. The final, negative review was posted under the heading "Reviews Submitted in 2010" and was numbered 1. For this final review, the date of the stay was listed as "12/21/09," but the posting date was "1/2/10." Ellipses followed this review to indicate that there were other reviews not shown.

In the control condition, the first five positive reviews appeared under the heading "Reviews 51–75." These

reviews were again numbered from 71 to 75, and ellipses preceded Review 71. The negative review was posted under the heading “Reviews 76–100” and was numbered 76, with ellipses following it. For this final review, the date of the stay was the same as in the phantom-first condition (12/21/09), but the posting date was 12/30/09. Thus, the control condition contained the same information and even the same visual boundary as the phantom-first condition, but neither the control condition’s boundary nor the final review itself conveyed any first-related information. Figure 2 shows the materials for this experiment.

Figure 2  
EXPERIMENT 2: HOTEL REVIEWS IN THEIR ORIGINAL LAYOUT

A: Phantom-First Condition	
<b>Reviews submitted in 2009:</b>	
...	
<b>Review #71</b>	
"Great hotel! I stay here every time I'm in town." <i>maggiekw</i> , Columbia, SC	
Date of stay: 7/31/09	
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/09	
<b>Review #72</b>	
"This place is great. The rooms are affordable, and the location can't be beat." <i>gobolts</i> , St. Louis, MO	
Date of stay: 8/3/09	
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/09	
<b>Review #73</b>	
"Good value, good service, big rooms. Highly recommend!" <i>lluv2fish</i> , Mandeville, LA	
Date of stay: 8/28/09	
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/09	
<b>Review #74</b>	
"I love the free breakfast in the morning!" <i>dylanfan85</i> , Tempe, AZ	
Date of stay: 9/12/09	
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/09	
<b>Review #75</b>	
"Really nice rooms. Loved the free wi-fi!" <i>gibson5000</i> , Philadelphia, PA	
Date of stay: 11/19/09	
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/09	
<b>Reviews submitted in 2010:</b>	
<b>Review #1</b>	
"This place is pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." <i>mlewis89</i> , Atlanta, GA	
Date of stay: 12/21/09	
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 1/2/10	
...	
B: Control Condition	
<b>Reviews 51-75:</b>	
...	
<b>Review #71</b>	
"Great hotel! I stay here every time I'm in town." <i>maggiekw</i> , Columbia, SC	
Date of stay: 7/31/09	
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/09	
<b>Review #72</b>	
"This place is great. The rooms are affordable, and the location can't be beat." <i>gobolts</i> , St. Louis, MO	
Date of stay: 8/3/09	
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/09	
<b>Review #73</b>	
"Good value, good service, big rooms. Highly recommend!" <i>lluv2fish</i> , Mandeville, LA	
Date of stay: 8/28/09	
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/09	
<b>Review #74</b>	
"I love the free breakfast in the morning!" <i>dylanfan85</i> , Tempe, AZ	
Date of stay: 9/12/09	
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/09	
<b>Review #75</b>	
"Really nice rooms. Loved the free wi-fi!" <i>gibson5000</i> , Philadelphia, PA	
Date of stay: 11/19/09	
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/09	
<b>Reviews 76-100:</b>	
<b>Review #76</b>	
"This place is pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." <i>mlewis89</i> , Atlanta, GA	
Date of stay: 12/21/09	
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 12/30/09	
...	

Participants then indicated how likely they would be to stay at the hotel (on a 7-point scale, from “not at all likely” to “extremely likely”), the most they would spend on a night at the hotel (on a 16-point scale, from “\$0” to “over \$210,” in \$15 increments), and how much they expected to enjoy staying at the hotel (on a 7-point scale, from “not at all” to “extremely”). Participants also rated the hotel’s value, location, and cleanliness on three separate 7-point scales (“not at all a good value/an extremely good value,” “not at all a good location/an extremely good location,” and “not at all clean/extremely clean”).

Results and Discussion

Participants had a worse impression of the hotel when the negative review was the 1st review posted in 2010 than when it was the 76th review posted in 2009. Participants were reliably less willing to stay at the hotel, were willing to spend reliably less money, and expected to enjoy their stay reliably less when the negative review was the first of 2010 (see Table 2). A composite of these three standardized measures ( $\alpha = .76$ ) revealed that impressions were reliably worse in the phantom-first condition ( $t(199.7) = 3.63, p < .001, d = .49$ ).

Participants also perceived the specific qualities of the hotel less positively when the negative review was a phantom first, believing the hotel to be a reliably poorer value, reliably less clean, and in a slightly worse location (see Table 2). A composite of these three measures ( $\alpha = .78$ ) reliably differed between conditions ( $t(205.7) = 2.48, p = .01, d = .34$ ).

When the negative review happened to have been posted just after (vs. before) the new year, it exerted greater influence, even though nothing else about the review, including the date of the stay, changed. A separate study replicated these results. Participants ( $N = 40$ ) saw the same reviews, with participants in the phantom-first condition seeing the reviews under the headings “Reviews Submitted in 2009” and “Reviews Submitted in 2010” as before. Participants in the control condition saw all reviews under the “2009” heading. Participants were reliably less willing to stay at the hotel, were willing to pay reliably less, and expected to enjoy their stay somewhat less in the phantom-first condition (standardized composite:  $M_{\text{phantom-first}} = -.34$  vs.  $M_{\text{control}} = .37; t(38) = 2.97, p = .005, d = .95$ ). Participants also believed the hotel to be a reliably poorer value, reliably less

Table 2  
EXPERIMENT 2: IMPRESSIONS OF THE HOTEL

	Framing of the Negative Review	
	First Review of 2010 <i>M (SD)</i>	Review 76 <i>M (SD)</i>
Likelihood of staying at hotel	4.8 (1.4)	5.5 (1.0)**
Willingness to pay for room (\$)	107.85 (37.20)	117.60 (32.10)*
Predicted enjoyment of stay	4.9 (1.1)	5.3 (.9)**
Standardized overall impression	-.2 (.9)	.2 (.7)**
Rated value	5.0 (1.2)	5.3 (.9)**
Rated location	5.2 (1.1)	5.4 (1.1)
Rated cleanliness	5.0 (1.2)	5.3 (1.0)**
Composite of hotel qualities	5.0 (1.0)	5.4 (.8)**

\* $p < .05$ .  
\*\* $p \leq .01$ .

clean, and in a marginally worse location in the phantom-first condition (composite:  $M_{\text{phantom-first}} = 4.8$  vs.  $M_{\text{control}} = 5.6$ ;  $t(38) = 2.85$ ,  $p = .01$ ,  $d = .95$ ).

These results reveal that a piece of information can be turned into a phantom first through a simple framing manipulation. That information then exerts greater influence on judgment than it would otherwise, just as a true first experience would. Together, Experiments 1 and 2 demonstrate that phantom firsts can be created in diverse contexts and through either internally derived, personally relevant boundaries or externally imposed, arbitrary boundaries.

### EXPERIMENT 3: VISITING THE DENTIST

In Experiments 1 and 2, participants encountered a series of generally positive information followed by a piece of negative information. The negative information had a greater impact when it was framed as a first. Experiment 3 explores the range of phantom-first effects, examining whether they are limited to situations in which the phantom-first information is negative or whether framing positive information can also yield similar effects.

Experiment 3 also uses a subtler phantom-first manipulation. Participants imagined five visits to the dentist, with the fifth visit described either as having occurred “around the time of” the 2012 presidential election or as the “first” visit following the election. Insofar as the election had no plausible bearing on the dentist visit, this manipulation allowed us to hold everything about the target experience constant and to examine whether an experience can be framed as a phantom first by using an external, unrelated event to create an arbitrary boundary.

#### Method

**Participants.** Participants ( $N = 437$ ) were recruited from Amazon.com’s Mechanical Turk service (MTurk). They received \$.15 for their participation.

**Procedure.** Participants were randomly assigned to one cell of a 2 (valence: generally positive with negative final visit vs. generally negative with positive final visit)  $\times$  2 (framing of final visit: phantom-first visit vs. next visit) design. Participants read that they regularly visited their dentist, Dr. Hall. In the generally negative, phantom-first condition, they read, “You don’t really care for him or his practice, which is unfortunate, because he is the only dentist in town who is covered by your insurance.”

They then read descriptions of five recent visits:

In November 2010, Dr. Hall kept you waiting for 45 minutes after your cleaning was done so he could take a look at your teeth. He only spent 2 minutes checking them before he left again. You ended up being late for a meeting afterward.

In May 2011, you got there on time, only to learn that they had accidentally cancelled your appointment and no longer had room to see you. You had to come back for your cleaning a week and a half later when they could squeeze you in.

In November 2011, they mixed up your file with someone else’s and lost your X-rays, causing a great deal of confusion. Luckily the hygienist caught the mistake before they had to take new X-rays, which wouldn’t have been covered by your insurance.

In May 2012, you had a new hygienist clean your teeth. She seemed to do an okay job, but she was not very gentle at all, and your gums hurt for a week after the appointment.

But in November 2012, at your first appointment after the presidential election, you had a painless cleaning, and finished 15 minutes earlier than you planned. Dr. Hall also threw in a battery-powered toothbrush at no charge, just to make sure you would use it.

To create the generally negative, next visit condition, we described the final visit as “your appointment around the time of the presidential election.” For the generally positive conditions, the preface was “You really like him and his practice, which is fortunate, because he is the only dentist in town who is covered by your insurance,” and participants read opposite-in-valence versions of each visit. For example, the positive version of the November 2010 visit was as follows: “Dr. Hall made sure to check in on you and take a look at your teeth, even though he was scheduled to start a long procedure in the middle of your appointment. This meant you got finished 15 minutes early.” We manipulated the framing of the final visit using the same election manipulation. The visit itself was described as “You had a painful cleaning, and finished 45 minutes later than you planned. Dr. Hall also made you buy a battery-powered toothbrush from him, just to make sure you would use it.”

Participants then made predictions about their next visit, in terms of how prompt the appointment would be, how attentive Dr. Hall and his practice would be, how friendly Dr. Hall and his practice would be, and how painful the next appointment would be. They rated each item on a seven-point scale (e.g., “not at all prompt/extremely prompt”). They also rated their likelihood of recommending Dr. Hall on a seven-point scale (“I would definitely not recommend Dr. Hall/I would definitely recommend Dr. Hall”).

#### Results and Discussion

As Table 3 shows, first framing reduced opinions of Dr. Hall’s practice when the framed visit was negative, and it boosted opinions when the framed visit was positive. We subjected each dependent measure to a 2 (valence)  $\times$  2 (framing of final visit) between-subjects analysis of variance (ANOVA). For each measure except “how painful,”

**Table 3**  
EXPERIMENT 3: EVALUATIONS OF THE DENTIST

	Valence of the Final Visit			
	Negative		Positive	
	Framing of the Final Visit	Framing of the Final Visit	Framing of the Final Visit	Framing of the Final Visit
	First M (SD)	Next M (SD)	First M (SD)	Next M (SD)
Promptness	4.60 (1.36)	5.03 (1.22)*	3.65 (1.58)	3.16 (1.28)**
Attentiveness	4.83 (1.45)	5.39 (1.15)**	3.70 (1.52)	3.19 (1.38)**
Friendliness	4.91 (1.37)	5.26 (1.24)*	4.32 (1.42)	3.74 (1.26)**
Painfulness	3.95 (1.15)	3.89 (1.50)	3.91 (1.36)	4.05 (1.18)
Recommendation	4.58 (1.64)	4.90 (1.49)	2.62 (1.58)	2.29 (1.26)
Composite	4.57 (.96)	4.89 (.77)**	3.64 (1.01)	3.28 (.83)**

\* $p < .05$ .

\*\* $p \leq .01$ .

Notes: Significance levels refer to tests of the simple effects of framing in each valence condition.

we found a reliable main effect of valence (all  $ps < .001$ , except “how painful,”  $p = .67$ ). For no measure was there a reliable main effect of framing (all  $ps > .35$ ). More important, for each measure except “how painful,” we found a reliable interaction, with first framing increasing evaluations when the framed event was positive but reducing evaluations when that event was negative (promptness:  $F(1, 433) = 12.26, p = .001, \eta_p^2 = .03$ ; attentiveness:  $F(1, 433) = 16.72, p < .001, \eta_p^2 = .04$ ; friendliness:  $F(1, 433) = 13.60, p < .001, \eta_p^2 = .03$ ; painfulness:  $F(1, 433) = .65, p = .42, \eta_p^2 = .002$ ; recommendation:  $F(1, 433) = 5.18, p = .02, \eta_p^2 = .01$ ). The absence of effects for “how painful” could be due to the possibility that people consider pain more a function of a patient’s pain tolerance than a dentist’s skills.

A composite of all five dependent measures ( $\alpha = .75$ ) revealed a reliable main effect of valence ( $F(1, 433) = 219.34, p < .001, \eta_p^2 = .34$ ) and a reliable interaction ( $F(1, 433) = 15.51, p < .001, \eta_p^2 = .04$ ). First framing hurt evaluations in the negative, final-visit condition ( $t(219) = -2.73, p = .007, d = .37$ ) and helped evaluations in the positive, final-visit condition ( $t(206.2) = 2.84, p = .005, d = .39$ ).

Thus, Experiment 3 shows that both positive and negative events can be framed as firsts and exert greater influence on judgment than they would otherwise. Experiment 3 also shows that even an arbitrary, unrelated occurrence (i.e., the presidential election) can be invoked to draw a boundary that then frames an event as a first. This manipulation of framing is arguably even subtler (and even less relevant to the target event) than that used in Experiments 1 or 2; yet robust phantom-first effects emerged.

#### EXPERIMENT 4: NEW COFFEE FLAVORS

Experiments 1–3 document phantom-first effects in a range of settings, but in all cases, the first-framing manipulation was applied to the final piece of information in a series. Experiment 4 investigates whether any piece of information in a sequence, even one in the middle, can be framed as a first and become more influential. Experiment 4 also examines a more managerially actionable framing manipulation. In Experiments 1–3, we used uninformative circumstances or boundaries to create phantom firsts, but in Experiment 4, we used a special storewide event to frame one store visit as a first.

Another goal of Experiment 4 is to explore a potential mechanism underlying phantom-first effects. As we noted previously, primacy effects may arise because first information may receive more attention than subsequent information (Anderson and Hubert 1963; Stewart 1965). If phantom-first effects operate through a similar mechanism, phantom firsts may attract more attention than they would if they were not so framed, and this may explain their greater influence on judgment. If so, we might expect people to remember experiences better when these experiences are framed as firsts than when they are not.

#### Method

Participants ( $N = 288$ ) at a West Coast university participated in exchange for credit in business classes. Participants were randomly assigned to one cell of a 2 (framing of target visit: phantom-first visit or next visit)  $\times$  2 (placement of target visit: third or final) between-subjects design. Participants read a vignette that asked them to imagine having a

favorite coffee shop that they visited often. They then read descriptions of four positive visits and one negative visit to that coffee shop. For example, participants for whom the target visit was both a phantom first and the final visit read the following:

On December 26th, your normal drink was even better than usual; the balance of ingredients was just perfect.

On December 27th, the cashier didn’t charge you for your drink at all, to thank you for being a loyal customer.

Then, on December 29th, the barista snuck your drink to the head of the line (ahead of 4 other people) because she could tell you were in a hurry.

On December 30th, you bought a cookie to go with your usual drink, and it was the tastiest thing you’d eaten in a long time. The cashier also upsized your drink to 20 ounces for free.

On your first visit during their weeklong “New Year New Flavors” event, on January 2nd, they forgot your drink order, so you had to wait an extra 10 minutes, and they gave you a 12 ounce drink even though you paid for 16 ounces. To top all of this off, the drink wasn’t even very good.

For participants for whom the target visit was framed as the next visit, the January 2 visit was changed to “On a visit during their weeklong ‘Flavors of 2013’ event, on January 2nd, they forgot...” We predicted that the “Flavors of 2013” framing, which does not highlight the newness of the year, would not make the January 2 visit seem like a first visit in the way that the first visit during the “New Year New Flavors” event would.

For participants for whom the target visit occurred third, we moved the negative visit to the third position (and moved the drink-to-the-head-of-the-line visit to the final position), and we changed the dates of the visits to December 29 and 30 and January 2, 3, and 4. We manipulated the framing of the negative visit using the same “New Year New Flavors”/“Flavors of 2013” manipulation.

Participants were asked to predict their experience on their next visit, on January 5. They predicted the quality of their drink, the food, and the service on three separate seven-point scales, ranging from “the worst [drink/food/service] ever” to “the best [drink/food/service] ever.” They also predicted their overall impression of the shop on the next visit on a seven-point scale, ranging from “extremely negative” to “extremely positive.”

On the next screen, we tested memory of the negative experience. We asked participants how many extra minutes they had to wait when their order was forgotten, the size of the drink they received by mistake, and the month and date on which the negative experience occurred.

#### Results

As Table 4 shows, framing the negative visit as a first generally reduced evaluations of the coffee shop, and this effect did not reliably interact with the placement of the target visit. We subjected each dependent measure to a 2 (framing of target visit)  $\times$  2 (placement of target visit) between-subjects ANOVA. For each measure, the main effect of placement was reliable (all  $ps < .001$ ), indicating that the shop seemed worse when the negative visit was last

Table 4  
EXPERIMENT 4: EVALUATIONS OF THE COFFEE SHOP

	Placement of the Target Visit			
	Third		Final	
	Framing of the Target Visit		Framing of the Target Visit	
	First M (SD)	Next M (SD)	First M (SD)	Next M (SD)
Quality of drink	5.01 (1.27)	5.29 (1.09)	4.24 (1.39)	4.67 (1.35)
Quality of food	5.01 (1.26)	5.21 (1.22)	4.33 (1.39)	4.80 (1.24)*
Quality of service	5.11 (1.42)	5.18 (1.11)	4.36 (1.54)	4.71 (1.44)
Overall impression	5.32 (1.37)	5.52 (1.29)	4.39 (1.54)	4.81 (1.34)
Composite	5.11 (1.24)	5.30 (1.08)	4.33 (1.37)	4.75 (1.23)

\* $p < .05$ .

Notes: Significance levels refer to tests of the simple effects of framing in each placement condition.

than when it was third. More important, we found a reliable main effect of framing, such that impressions were lower when the negative experience was first framed, for the predicted quality of the drink and food ( $F(1, 284) = 5.46, p = .02, \eta_p^2 = .02$ ;  $F(1, 284) = 4.85, p = .03, \eta_p^2 = .02$ , respectively); a marginally reliable effect of framing for the predicted overall impression ( $F(1, 284) = 3.69, p = .06, \eta_p^2 = .01$ ); and a directional effect of framing for the predicted service quality ( $F(1, 284) = 1.72, p = .19, \eta_p^2 = .01$ ). In no case did the effect of framing interact with the placement of the target visit (all  $F_s < 1$ , all  $p_s \geq .35$ ), suggesting that the phantom-first effect was not reliably different when the framed visit was third rather than last. A composite of all four dependent measures ( $\alpha = .95$ ) revealed a reliable main effect of frame ( $F(1, 284) = 4.34, p = .04, \eta_p^2 = .02$ ), a reliable main effect of placement ( $F(1, 284) = 20.98, p < .001, \eta_p^2 = .07$ ), and no interaction ( $F(1, 284) = .66, p = .42, \eta_p^2 = .002$ ).

We found no consistent evidence that the phantom-first manipulation affected recall of the negative visit. Similar percentages of participants accurately recalled the length of the delay, regardless of frame (target visit third:  $M_{\text{first}} = 87.7\%$  vs.  $M_{\text{next}} = 84.0\%$ ;  $\chi^2(1, N = 148) = .41, p = .52$ ; target visit last:  $M_{\text{first}} = 84.1\%$  vs.  $M_{\text{next}} = 87.1\%$ ;  $\chi^2(1, N = 139) = .27, p = .60$ ). The same was true for recall of the size of the affected drink (target visit third:  $M_{\text{first}} = 87.7\%$  vs.  $M_{\text{next}} = 83.6\%$ ;  $\chi^2(1, N = 146) = .50, p = .48$ ; target visit last:  $M_{\text{first}} = 82.6\%$  vs.  $M_{\text{next}} = 78.5\%$ ;  $\chi^2(1, N = 139) = .36, p = .55$ ), the month of the negative visit (target visit third:  $M_{\text{first}} = 82.2\%$  vs.  $M_{\text{next}} = 71.6\%$ ;  $\chi^2(1, N = 147) = 2.31, p = .13$ ; target visit last:  $M_{\text{first}} = 77.9\%$  vs.  $M_{\text{next}} = 88.4\%$ ;  $\chi^2(1, N = 137) = 2.69, p = .10$ ), and the date of the visit (target visit third:  $M_{\text{first}} = 47.2\%$  vs.  $M_{\text{next}} = 43.2\%$ ;  $\chi^2(1, N = 146) = .23, p = .63$ ; target visit last:  $M_{\text{first}} = 55.9\%$  vs.  $M_{\text{next}} = 60.3\%$ ;  $\chi^2(1, N = 136) = .27, p = .60$ ). To the extent that memory of the target information is an indirect measure of attention, these results offer little support for the idea that first-framed information receives greater attention.

### Discussion

Experiment 4 shows that phantom-first effects are not limited to the final piece of information in a sequence. That being said, although placement and frame did not reliably interact, Table 4 reveals that the effect of frame was somewhat smaller when the framed event was third. This could

be because it was easier for participants to overlook the target negative event (and, thus, the entire manipulation) when it was third, perhaps because of the particular way we presented the information. This speculation is supported by the higher ratings given when the negative event was third, suggesting that some participants may not have noticed the negative event in that case. Although there may have been a trend for phantom-first effects to have been weaker when the framed event was in the middle of a sequence, this was not close to a reliable trend, and it may simply have been due to people not noticing the framed item. Experiment 4 also shows a managerially actionable method of creating phantom-first effects: storewide promotions and events can be named in a way that makes customers view a visit to a familiar store as a first visit.

Finally, the recall results suggest that participants attended to the negative experience fairly strongly across conditions and that there were no substantial attention differences between conditions. Although it is always difficult to interpret null results, we found scant evidence to suggest that differential attention between frames drives phantom-first effects. We propose that the effects instead may have arisen because the final experience, though attended to fairly consistently across frames, seemed more important and thus was weighted more heavily when it was a phantom first. Experiments 5 and 6 investigate the weighting and attention explanations further.

### EXPERIMENT 5: A FIRST IS THE WORST

With Experiment 5, we aim to further clarify the mechanisms underlying phantom-first effects. As we noted previously, one possibility arising from the literature on primacy effects is that firsts, even phantom firsts, are more likely to be attended to than nonfirsts (Anderson and Hubert 1963; Stewart 1965). A different possibility is that phantom firsts do not necessarily capture more attention but rather that people weight them more heavily when forming judgments, just as they may weight true firsts more heavily (Anderson 1965). Experiment 4 casts some doubt on the attention mechanism, but in Experiment 5, we further tease apart these two mechanisms.

In Experiment 5, participants compared two sequences of weather reports. Each sequence reported five days of good weather followed by one day of bad weather. The final weather report was described as the first day of vacation in one sequence but as the sixth day of vacation in the other sequence. We asked participants to compare the sequences and to indicate which sequence boded worse for future weather. We predicted that participants would explicitly view the bad weather as more meaningful for future weather when it was framed as a first.

This design allowed us to examine whether participants, even when directly comparing two identical pieces of information, still found the first-framed information more influential. Because participants had to directly compare two ways of framing the same piece of information, any systematic influence of framing is unlikely to be due to one frame capturing attention more than the other and is more likely to be due to participants considering the first-framed information more important and deserving of greater weight in judgment.



### Method

Forty-five participants were recruited from MTurk. They received \$.20 for their participation. Participants imagined visiting Paris. They read the same scenario from Experiment 1 that described six weather reports, with good weather from Sunday through Thursday and bad weather on Friday. The only change from the scenarios in Figure 1 is that we omitted any mention of when these days fell during the trip. Immediately after reading about the weather, they were told the following:

Imagine the timing of this vacation going in one of two ways:

In *Vacation #1*, you first arrive on Sunday. You check the weather on the first five days of your trip, and every day, the weather is lovely—Sunday through Thursday are all sunny and warm. However, you wake up in Paris for the *sixth day* of your trip, and it's a miserable rainy day.

In *Vacation #2*, you will first arrive on Friday. You check the weather on the five days leading up to your trip, and every day, the weather is lovely—Sunday through Thursday are all sunny and warm. However, you arrive in Paris on Friday for the *first day* of your trip, and it's a miserable rainy day.

Participants then indicated for which of those two vacations they would be more likely to characterize Friday's rainy weather as an omen for the rest of the vacation, for which vacation the chance of rain on Saturday would be higher, for which vacation the high temperature on Saturday would be warmer, for which vacation the weather on the rest of their trip would be nicer, and for which vacation they would be more likely to need to change their plans. They responded to these items on six-point scales, ranging from a definite response of Vacation 1 (in which the rainy Friday was the sixth vacation day) to a definite response of Vacation 2 (in which the rainy Friday was the first vacation day), with higher ratings corresponding to Vacation 2.

### Results and Discussion

Although the two sequences of weather reports were objectively the same, participants rated the rainy day as more important when it was framed as a first. For example, participants believed that a rainy first day of vacation was more of a sign about the future weather than a rainy sixth day: Responses ( $M = 4.56$ ,  $SD = 1.62$ ) were significantly above the scale midpoint of 3.5 ( $t(44) = 4.38$ ,  $p < .001$ ,  $d = .65$ ). As Table 5 shows, participants also believed that a rainy first (vs. sixth) day of vacation indicated a reliably higher chance of rain on Saturday, a reliably less warm Saturday, a reliably greater change in future plans, and somewhat less nice weather on the rest of the trip. A composite of these measures ( $\alpha = .62$ ), with each measure coded so that higher values indicated that Vacation 2's weather would be worse, was significantly above the midpoint ( $M = 4.01$ ,  $SD = 1.14$ ;  $t(44) = 3.02$ ,  $p = .004$ ,  $d = .45$ ).

Experiment 5 suggests that even when two pieces of information are identical, are presented side by side, and differ only in terms of framing, first-framed information is considered more diagnostic. These findings suggest that phantom-first effects do not merely arise because first-framed information captures attention in a way that equiva-

Table 5  
EXPERIMENT 5: COMPARATIVE PARIS WEATHER

	<i>M (SD)</i>
Which rainy Friday is more of a sign?	4.56 (1.62)**
For which vacation is rain more likely on Saturday?	4.02 (1.73)*
For which vacation is Saturday likely to be warmer?	2.96 (1.62)*
Which vacation's weather is likely to be nicer?	3.13 (1.70)
Which vacation is more likely to require a change in plans?	4.11 (1.61)*
Composite	4.01 (1.14)**

\* $p < .05$ .

\*\* $p < .01$ .

Notes: We conducted significance tests versus the scale midpoint of 3.5. Higher ratings indicate a response of Vacation 2 (the phantom-first vacation). For the composite, items were recoded so that higher values corresponded to Vacation 2 having worse weather than Vacation 1.

lent nonfirst information does not: participants had to attend to and compare the information in both framings to formulate their responses but were still systematically influenced by the frame. Rather, even when attention to the phantom-first and nonfirst information is equated, people still explicitly endorse the idea that phantom-first information is more important. Experiment 6 further tests a weighting explanation.

### EXPERIMENT 6: WEIGHING THE EVIDENCE

Experiments 4 and 5 suggest that phantom-first effects are not primarily driven by people being more likely to attend to experiences when they are framed as firsts. Rather, people may treat firsts as important and thus weight phantom firsts heavily in judgment (Anderson 1965).

To investigate this possibility, we presented people with the hotel reviews from Experiment 2, framing the final review as a first in one condition but not in the other. Participants were asked to read the reviews and to rank their importance. If phantom-first information exerts more influence on judgment because people weight information more heavily when it is framed as a first than when it is not, the final review should be ranked as more important, and may even be ranked as the *most* important review more often, when it is a phantom first than when it is not. As an additional test of the attention mechanism, Experiment 6 also included a recall task to examine whether memory of the target experience is better when it is first framed.

Unlike Experiment 5, this experiment featured a between-subjects manipulation of framing. Experiment 5's design was useful because it showed that even when our manipulation was entirely transparent, participants still treated information that incidentally appeared to be first information differently from information that did not. However, Experiment 5's within-subject design could raise concerns about a potential demand effect, and thus Experiment 6's between-subjects design investigates whether participants perceive phantom-first information as more important even when the manipulation is not highlighted by presenting both framings. Furthermore, Experiment 6's rankings are a fairly direct measure of participants' views of the importance of the first-framed information for subsequent judgments.

### Method

*Participants.* Participants ( $N = 448$ ) were recruited from MTurk. They received \$.20 for their participation.

*Materials and design.* All participants were randomly assigned to read one set of the six hotel reviews used in Experiment 2, with five positive reviews followed by one negative review. The only changes to the reviews were an updating of the years of the reviews (from 2009 and 2010 to 2012 and 2013). The phantom-first manipulation was similar to that in Experiment 2: The sixth, negative review was either the 1st of 2013 (phantom-first condition) or the 76th review (control condition). We crossed this phantom-first manipulation with a manipulation of which one of the positive reviews was the actual first review: For half the participants, the “great hotel” review was first and the “good value” review was third, and for the other half, the “good value” review was first and the “great hotel” review was third (for review details, see Figure 2). We introduced this manipulation to examine whether a review seemed more important when it was a true first than when it was not (i.e., to examine whether there was a literal primacy effect for these stimuli on the dimension of importance). Thus, the design was 2 (framing of final review: phantom first vs. control)  $\times$  2 (content of first review: great hotel vs. good value).

*Procedure.* We asked participants to imagine deciding with a friend which hotel to book. We asked them how much each review would matter in their evaluations of this hotel, specifically asking them to rank the reviews from 1 (“the most influential review”) to 6 (“the least influential review”). After completing their rankings, participants advanced to a new screen, on which we tested their memory of the negative review. They were asked to select the reviewer’s screen name (joeyjoejoejr, mlewis89, or thegirl12), the reviewer’s hometown (Atlanta, GA; Carlsbad, CA; or Gainesville, FL), and the reviewer’s complaint (“too hot,” “very loud,” or “pretty bad”).

### Results

The participants ranked the final, negative review as more influential (i.e., gave it a lower mean rank) when it was framed as a first than when it was not. A 2 (framing of final review)  $\times$  2 (content of first review) ANOVA on the final review’s mean rank revealed only a main effect of framing ( $M_{\text{phantom first}} = 3.74$  vs.  $M_{\text{control}} = 4.41$ ;  $F(1, 444) = 13.17, p < .001, \eta_p^2 = .03$ ; other  $ps > .15$ ). Furthermore, reliably more participants ranked the negative review as the most influential review (i.e., ranked it number 1) when it was framed as a first than when it was not (25.1% vs. 16.7%;  $\chi^2(1, N = 448) = 4.73, p = .03$ ). Thus, participants explicitly acknowledged the negative review as more important when it was framed as a first than when it was not, consistent with an enhanced weighting account.

Also note that in the phantom-first condition, participants ranked the negative review as most important slightly more often than any other review (Review 1: 17.2%; Review 2: 23.3%; Review 3: 15.0%; Review 4: 4.4%; Review 5: 15.0%; Review 6/negative review: 25.1%). In contrast, in the control condition, Review 2 had a more decisive importance advantage (Review 1: 17.2%; Review 2: 29.0%; Review 3: 16.7%; Review 4: 6.3%; Review 5: 14.0%; Review 6/negative review: 16.7%). (The rankings are interdependent, so a conventional test of the significance of these choice-share differences would not be appropriate.)

Although our first-framing manipulation produced reliable changes in the perceived importance of the negative review, the importance of the two counterbalanced positive reviews was not consistently influenced by whether they came first or third. Instead, a 2 (framing of final review)  $\times$  2 (content of first review) ANOVA on the mean rank of the “great hotel” review revealed a main effect of framing but not of which review was first. The “great hotel” review seemed less important when the final, negative review was first framed ( $M_{\text{phantom first}} = 4.04$  vs.  $M_{\text{control}} = 3.73$ ;  $F(1, 444) = 4.02, p = .05, \eta_p^2 = .009$ ). The analysis also revealed a reliable interaction ( $F(1, 444) = 7.00, p = .008, \eta_p^2 = .02$ ): When the final, negative review was not framed as a first, the “great hotel” review seemed somewhat but not significantly more important when it was first than when it was third ( $Ms = 3.64$  vs.  $3.81$ ;  $t(219) = -.83, p = .41$ ). When the negative review was first framed, the “great hotel” review seemed less important when it was first rather than third ( $Ms = 4.39$  vs.  $3.73$ ;  $t(225) = 2.97, p = .003$ ). A similar ANOVA on the mean rank of the “good value” review revealed no reliable effects at all (all  $ps > .3$ ). We suspect that the lack of a literal primacy effect was due to the positive reviews being largely interchangeable, such that they did not stand out in any meaningful way from one another, even when they were first in the sequence. In addition, rankings are not independent, so any influence of the negative final review necessarily constrains the influence of the other positive reviews.

Of more relevance to understanding phantom-first effects, we also examined recall of the negative review. Framing did not reliably affect recall of the reviewer’s screen name ( $M_{\text{phantom first}} = 65.9\%$  vs.  $M_{\text{control}} = 69.5\%$ ;  $\chi^2(1, N = 421) = .64, p = .42$ ) or hometown ( $M_{\text{phantom first}} = 75.8\%$  vs.  $M_{\text{control}} = 73.8\%$ ;  $\chi^2(1, N = 421) = .23, p = .63$ ). Framing had a marginal effect on memory of the reviewer’s complaint ( $M_{\text{phantom first}} = 97.6\%$  vs.  $M_{\text{control}} = 94.3\%$ ;  $\chi^2(1, N = 421) = 3.04, p = .08$ ). Although this marginal difference is intriguing, these null results, considered with the recall data from Experiment 4, suggest that attention is unlikely to be driving the differences in the influence of the negative review. Twenty-seven participants ranked the reviews but did not complete the memory measures, perhaps because they could not recall the answers. These participants were roughly evenly distributed across conditions, with the greatest number of omissions in one of the first-framing conditions, again speaking against an attention-related explanation of our effects. If we eliminate these participants from the rankings analysis, the results do not change in any substantive way.

### Discussion

Participants rated the final, negative review as more important when it was framed as a first review than when it was not, but the first framing did not systematically enhance memory of that review. This finding further suggests that first framing causes the framed information to be weighted more heavily but not necessarily to be attended to more closely. Although we realize the difficulty of drawing inferences from null findings, neither Experiment 4 nor the current experiment found a memory advantage for first-framed information (despite the significant influence of first framing on judgment), and Experiment 5 showed phantom-first

effects even when we held attention to the framed information constant. Across multiple studies, first framing did not produce substantive differences in how well participants recalled information, suggesting that phantom-first effects stem not from extra attention to the first-framed item but rather from a more holistic judgment about the relative importance of each piece of information in context (e.g., Goldstein 1990). Although important information may sometimes be recalled at a greater rate than less important information (e.g., Britton et al. 1979), we suspect that several factors prevented such a difference from emerging here, including the limited time available for more strategic, importance-driven rehearsal.

In a similar but smaller study, we asked 42 participants (recruited from MTurk) to read one of the two sets of reviews shown in Figure 2 and to imagine that they were deciding on a hotel with a friend. Participants were asked only to select the three reviews that they believed would be most important for their friend to read before deciding on the hotel. Participants were more likely to choose the negative review as one of the three most important reviews when it was framed as a first than when it was not (80% vs. 50%;  $\chi^2(1, N = 42) = 4.11, p = .04$ ).

These results, together with the results of Experiment 5, suggest that phantom-first information has an increased influence on judgment because it simply seems more important to people than it seems when it is not first framed. In Experiment 6, the final piece of information was always negative and set off from the others by a boundary and a label. Despite the equivalent availability and visual salience of the final review across conditions, participants explicitly rated the review as more important when they could encode it as a first review.

### GENERAL DISCUSSION

The degree to which impressions appear to be first impressions is malleable, such that experiences that are manipulated simply to *seem* like firsts are more influential. These effects seem to arise not because of extra attention given to phantom firsts but rather because phantom firsts simply seem more important and thus are given more weight. Experiments 1 and 2 show that a later part of a sequence of information can be reframed as a first piece of information and thus can exert a disproportionate influence on judgment, even when the framing changes nothing about the information, its diagnosticity, or its visual salience. Both positive and negative pieces of information can be framed as phantom firsts (Experiment 3), and phantom-first effects can arise even when the framed information is followed by other, nonframed information (Experiment 4).

Experiments 4, 5, and 6 investigate why phantom-first effects arise. These experiments suggest that people find phantom-first information more important and thus weight it more heavily than they would otherwise (Experiments 5 and 6), but these experiments yielded scant evidence that people pay increased attention to phantom firsts (Experiments 4, 5, and 6). This does not mean that phantom-first effects could never arise through an attentional mechanism; after all, attention to the target event is required for any framing to be successful. Rather, our results suggest that extra attention to a first-framed, compared with a non-framed, item is not necessary for phantom-first effects to

arise. Taken together, our results suggest that first-framed information seems more important than if it were not framed, leading the framed information to be weighted heavily in impression formation.

Thus, not only do firsts have a large influence on judgment, but so too do phantom firsts. This finding emphasizes the sensitivity of judgment to framing and contextual manipulations, and it introduces a novel type of framing effect. These effects also imply that people's private representations (e.g., "It's my first day in my new apartment") may heavily influence their perceptions of the world. People may not realize how these private representations distort the inferences they make about and the preferences they form regarding wholly unrelated targets (see Ariely and Norton 2009; Eibach, Libby, and Gilovich 2003).

Our findings also contribute to the literature on impression formation and primacy effects. Our data suggest the existence of "pseudoprimacy effects," in which information can arbitrarily be given the status of first information and thus affect judgment more heavily than before. Indeed, one possible implication of our findings is that almost all effects commonly interpreted as primacy effects should be instead considered pseudoprimacy effects. As we noted previously, a person's first experience with a store is rarely his or her first experience with *any* store, and thus this experience could be reframed from "my first experience at Kroger" to "just another experience at a supermarket." Similarly, a "first" encounter with a new supervisor could be recoded as "another encounter with a supervisor/a woman/a person." Although some situations spontaneously trigger a first mindset, our research shows how easily the first mindset can be artificially introduced, and it highlights the malleability and subjectivity of what people construe as firsts. Further research on impression formation could examine ways to introduce new firsts and ways to do the opposite—that is, reframe apparent firsts to seem like just another part of a larger category of experiences.

### EXTENSIONS, IMPLICATIONS, AND FUTURE DIRECTIONS

In our studies, phantom-first effects were triggered with simple framing manipulations that converted later pieces of information into first pieces of information. It would be worthwhile to consider other ways that a target experience could be associated with first experiences and thereby have an increased impact. Phantom-first effects might even emerge if a person merely recalled first experiences from his or her past and thus evoked the sense of experiencing a first. Perhaps the feeling of significance and weight a person experiences when recalling an important first would transfer to other unrelated judgments.

We have collected preliminary data that suggest that this may be the case. One hundred six college students answered either questions about their first week at college (e.g., who helped them move, the first class they attended) or parallel questions about last week (e.g., who visited their apartment, the most recent class they attended). Next, in an ostensibly unrelated task, participants evaluated promotional materials about an appealing new restaurant. Participants rated this restaurant as a more appealing concept (more popular, creative, novel, notable, and likable, with better food and service) when they had unrelated first experiences in mind than

when they did not (standardized composite:  $t(104) = 2.09, p = .04, d = .41$ ), suggesting that the generally appealing promotional materials had more influence on participants' impressions when they were contemplating other firsts. Thus, phantom-first effects may arise through even subtler manipulations than the ones used herein, and further research might consider the myriad ways through which phantom firsts could arise.

It is also important to consider practical and managerial applications of these effects. For example, research suggests that consumers are more likely to change their brand preferences when they themselves are experiencing change (Andreasen 1984). Perhaps this phenomenon occurs because experiences are more likely to be recoded as firsts during times of change (e.g., "Our first dinner out since the baby arrived"), and thus positive and negative consumption experiences might have more influence during these moments. If so, database marketing efforts might help firms identify these consumers, as they might naturally be adopting a first framing or might be highly receptive to a first-framed communication.

As another example, imagine someone who has made a negative first impression on a colleague. Might she be able to reset her colleague's opinion by subsequently highlighting an irrelevant first (e.g., "Welcome to our first team meeting of the new year")? Similarly, a restaurateur introducing a new summer menu might be able to foster more favorable impressions by inviting people to sample a "first taste of the summer," just as a retailer might be able to enhance shoppers' impressions by encouraging them to take a "first look" at the new fall fashions. Managers might even benefit from encouraging consumers to recall other firsts (e.g., "Think back to your very first...") while they are evaluating products. That being said, people's tendencies to form strong impressions when they are experiencing firsts may not be uniformly beneficial for all targets; for example, the restaurant that has a bad day while many of its customers are experiencing novelty, as on the first day of the semester, may be especially penalized. Still, we take a more optimistic view: despite what the old adage says, you can indeed get a second chance to make a first impression.

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## Forceful Phantom Firsts:

## Framing Experiences as Firsts Amplifies their Influence on Judgment

Robyn A. LeBoeuf, Elanor F. Williams, and Lyle A. Brenner

**Web Appendix***EXPERIMENT 1: PARIS WEATHER**Phantom-first condition:***Vacations and the Weather**

Imagine that you are going on a two-week vacation to Paris. You will first arrive on Friday. You would like to spend most of your time there **walking around the city** to get to museums and restaurants, seeing the **gardens and monuments**, and **strolling along the river**, so you pay careful attention to what the weather will be like. Each morning leading up to your trip, you check the Paris weather forecast for the day, so that you know what sort of clothes to wear and what sorts of activities you'll be able to do.

On each of the five days counting down to your trip, **the weather in Paris is beautiful**. On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It's perfect weather for strolling the streets and gardens of Paris.

On Friday, however, you arrive in Paris for the **first day** of your trip, and the skies are gray, it **rains all day**, and the high is only 62.

**Please answer the questions below based on your impression of what you just read.**

What do you think the chance of rain on the next day, **Saturday**, will be? *Please give a percentage between 0% (no chance of rain) and 100% (guaranteed to rain).*  %

What do you think the high temperature will be on the next day, **Saturday**? \_\_\_\_\_ degrees Fahrenheit

What do you think the weather will be like for **the rest of your trip**, from Saturday onward?

1	2	3	4	5	6	7	8	9
Miserable; completely rainy and cool				An equal mix of rain and sun, cool and warm				Beautiful; completely sunny and warm

From Saturday onward, how much do you think you will need to **adjust your plans** to accommodate the weather?

1	2	3	4	5	6	7	8	9
Not at all; my plans will stay exactly the same				They will change somewhat				Completely; the rest of the vacation will be entirely different from what I planned

How would you characterize **the weather in Paris** in general?

1  
Paris is  
always cool  
and rainy

2

3

4

5  
Paris is an  
equal mix of  
rain and sun,  
cool and  
warm

6

7

8

9  
Paris is  
always  
sunny and  
warm

*Control condition:*

### Vacations and the Weather

Imagine that you are going on a two-week vacation to Paris. You arrive on Sunday. You would like to spend most of your time there **walking around the city** to get to museums and restaurants, seeing the **gardens and monuments**, and **strolling along the river**, so you pay careful attention to the weather. Each morning, you check the Paris weather forecast for the day, so that you know what sort of clothes to wear and what sorts of activities you'll be able to do.

On each of the first five days of your trip, **the weather in Paris is beautiful**. On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It's perfect weather for strolling the streets and gardens of Paris.

On Friday, however, you wake up in Paris for the **sixth day** of your trip, and the skies are gray, it **rains all day**, and the high is only 62.

---

**Please answer the questions below based on your impression of what you just read.**

What do you think the chance of rain on the next day, **Saturday**, will be? *Please give a percentage between 0% (no chance of rain) and 100% (guaranteed to rain).*  %

What do you think the high temperature will be on the next day, **Saturday**? \_\_\_\_\_ degrees Fahrenheit

What do you think the weather will be like for **the rest of your trip**, from Saturday onward?

1	2	3	4	5	6	7	8	9
Miserable; completely rainy and cool				An equal mix of rain and sun, cool and warm				Beautiful; completely sunny and warm

From Saturday onward, how much do you think you will need to **adjust your plans** to accommodate the weather?

1	2	3	4	5	6	7	8	9
Not at all; my plans will stay exactly the same				They will change somewhat				Completely; the rest of the vacation will be entirely different from what I planned

How would you characterize **the weather in Paris** in general?

1	2	3	4	5	6	7	8	9
Paris is always cool and rainy				Paris is an equal mix of rain and sun, cool and warm				Paris is always sunny and warm



*EXPERIMENT 2: HOTEL RESERVATIONS*

*Phantom-first condition:*

## Choosing a Hotel

Imagine that you are planning a vacation and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six recent reviews.

Reviews submitted in 2009:						
...						
<b>Review #71</b>	“Great hotel! I stay here every time I’m in town.” <a href="#">maggiekw</a> , Columbia, SC					
<b>Date of stay:</b>	7/31/09					
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 9	<b>Cleanliness:</b> 10	<b>Review posted:</b> 8/5/09	
<b>Review #72</b>	“This place is great. The rooms are affordable, and the location can’t be beat.” <a href="#">gobolts</a> , St. Louis, MO					
<b>Date of stay:</b>	8/3/09					
<b>Overall rating:</b>	*****	<b>Value:</b> 10	<b>Location:</b> 9	<b>Cleanliness:</b> 8	<b>Review posted:</b> 8/10/09	
<b>Review #73</b>	“Good value, good service, big rooms. Highly recommend!” <a href="#">llov2fish</a> , Mandeville, LA					
<b>Date of stay:</b>	8/28/09					
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 9	<b>Cleanliness:</b> 9	<b>Review posted:</b> 9/14/09	
<b>Review #74</b>	“I love the free breakfast in the morning!” <a href="#">dylanfan85</a> , Tempe, AZ					
<b>Date of stay:</b>	9/12/09					
<b>Overall rating:</b>	****	<b>Value:</b> 10	<b>Location:</b> 8	<b>Cleanliness:</b> 8	<b>Review posted:</b> 9/15/09	
<b>Review #75</b>	“Really nice rooms. Loved the free wi-fi!” <a href="#">gibson5000</a> , Philadelphia, PA					
<b>Date of stay:</b>	11/19/09					
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 10	<b>Cleanliness:</b> 9	<b>Review posted:</b> 11/30/09	
Reviews submitted in 2010:						
<b>Review #1</b>	“This place is pretty bad. I don’t know what the other reviewers were talking about. I wouldn’t go back.” <a href="#">mlewis89</a> , Atlanta, GA					
<b>Date of stay:</b>	12/21/09					
<b>Overall rating:</b>	*	<b>Value:</b> 4	<b>Location:</b> 6	<b>Cleanliness:</b> 3	<b>Review posted:</b> 1/2/10	
...						

**How likely would you be to book a room at this hotel?**

\*                    \*                    \*                    \*                    \*                    \*

Not at all likely

Moderately likely

Extremely likely

**What's the HIGHEST AMOUNT you would be willing to spend on a night at this hotel? (Please circle one)**

\$0 \$15 \$30 \$45 \$60 \$75 \$90 \$105 \$120 \$135 \$150 \$165 \$180 \$195 \$210 over \$210

**If you stayed at this hotel, how much do you think you would enjoy your experience?**

\* \* \* \* \* \*

Not at all Moderately Extremely

## Choosing a Hotel (continued)

Please continue to answer these questions about the hotel described on the previous page. Feel free to refer to the previous page as often as you need to.

**Based on the reviews, what is your overall sense of how good a value this hotel is?**

\* \* \* \* \* \*

Not at all a good value A moderately good value An extremely good value

**Based on the reviews, what is your overall sense of the quality of this hotel's location?**

\* \* \* \* \* \*

Not at all a good location A moderately good location An extremely good location

**Based on the reviews, what is your overall sense of this hotel's cleanliness?**

\* \* \* \* \* \*

Not at all clean Moderately clean Extremely clean

Control condition:

## Choosing a Hotel

Imagine that you are planning a vacation and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six recent reviews.

Reviews 51-75:					
...					
<b>Review #71</b>					
"Great hotel! I stay here every time I'm in town." <a href="#">maggiekw</a> , Columbia, SC					
Date of stay: 7/31/09					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/09					
<b>Review #72</b>					
"This place is great. The rooms are affordable, and the location can't be beat." <a href="#">gobolts</a> , St. Louis, MO					
Date of stay: 8/3/09					
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/09					
<b>Review #73</b>					
"Good value, good service, big rooms. Highly recommend!" <a href="#">lluv2fish</a> , Mandeville, LA					
Date of stay: 8/28/09					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/09					
<b>Review #74</b>					
"I love the free breakfast in the morning!" <a href="#">dylanfan85</a> , Tempe, AZ					
Date of stay: 9/12/09					
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/09					
<b>Review #75</b>					
"Really nice rooms. Loved the free wi-fi!" <a href="#">gibson5000</a> , Philadelphia, PA					
Date of stay: 11/19/09					
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/09					
Reviews 76-100:					
<b>Review #76</b>					
"This place is pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." <a href="#">mlewis89</a> , Atlanta, GA					
Date of stay: 12/21/09					
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 12/30/09					
...					

How likely would you be to book a room at this hotel?

\*

\*

\*

\*

\*

\*

\*

Not at all likely

Moderately likely

Extremely likely

**What's the HIGHEST AMOUNT you would be willing to spend on a night at this hotel? (Please circle one)**

\$0 \$15 \$30 \$45 \$60 \$75 \$90 \$105 \$120 \$135 \$150 \$165 \$180 \$195 \$210 over \$210

**If you stayed at this hotel, how much do you think you would enjoy your experience?**

\* \* \* \* \*

Not at all Moderately Extremely

## Choosing a Hotel (continued)

Please continue to answer these questions about the hotel described on the previous page. Feel free to refer to the previous page as often as you need to.

**Based on the reviews, what is your overall sense of how good a value this hotel is?**

\* \* \* \* \*

Not at all a good value A moderately good value An extremely good value

**Based on the reviews, what is your overall sense of the quality of this hotel's location?**

\* \* \* \* \*

Not at all a good location A moderately good location An extremely good location

**Based on the reviews, what is your overall sense of this hotel's cleanliness?**

\* \* \* \* \*

Not at all clean Moderately clean Extremely clean

### EXPERIMENT 3: VISITING THE DENTIST

Generally negative, phantom-first condition:

#### Visiting the Dentist

Imagine that you regularly visit your dentist, Dr. Hall, for check-ups and other appointments. You don't really care for him or his practice, which is unfortunate, because he is the only dentist in town who is covered by your insurance. Here is what happened on your last five appointments:

--In **November 2010**, Dr. Hall kept you waiting for 45 minutes after your cleaning was done so he could take a look at your teeth. He only spent 2 minutes checking them before he left again. You ended up being late for a meeting afterward.

--In **May 2011**, you got there on time, only to learn that they had accidentally cancelled your appointment and no longer had room to see you. You had to come back for your cleaning a week and a half later when they could squeeze you in.

--In **November 2011**, they mixed up your file with someone else's and lost your x-rays, causing a great deal of confusion. Luckily the hygienist caught the mistake before they had to take new x-rays, which wouldn't have been covered by your insurance.

--In **May 2012**, you had a new hygienist clean your teeth. She seemed to do an okay job, but she was not very gentle at all, and your gums hurt for a week after the appointment.

--**But in November 2012, at your first appointment after the presidential election**, you had a painless cleaning, and finished 15 minutes earlier than you planned. Dr. Hall also threw in a battery-powered toothbrush at no charge, just to make sure you would use it.

*Based on your past experiences, what would you expect your next visit to Dr. Hall to be like?*

**How prompt will the appointment be?**

*	*	*	*	*	*	*
Not at all prompt						Extremely prompt

**How attentive will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all attentive						Extremely attentive

**How friendly will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all friendly						Extremely friendly

**How painful will the next appointment be?**

*	*	*	*	*	*	*
Not at all painful						Extremely painful

**How likely would you be to recommend Dr. Hall to someone who is looking for a dentist?**

*	*	*	*	*	*	*
I would definitely NOT recommend Dr. Hall						I would definitely recommend Dr. Hall

*Generally positive, phantom-first condition:*

### Visiting the Dentist

Imagine that you regularly visit your dentist, Dr. Hall, for check-ups and other appointments. You really like him and his practice, which is fortunate, because he is the only dentist in town who is covered by your insurance. Here is what happened on your last five appointments:

-- **In November 2010**, Dr. Hall made sure to check in on you and take a look at your teeth, even though he was scheduled to start a long procedure in the middle of your appointment. This meant you got finished 15 minutes early.

-- **In May 2011**, you realized at the last minute that you had a conflict that meant you couldn't make your scheduled time. They were great about rescheduling you for the next week, when your schedule was more open.

-- **In November 2011**, Dr. Hall thought that you might need some sealant on your teeth to prevent cavities. He applied it without charging you or your insurance for it.

-- **In May 2012**, you had a new hygienist clean your teeth. She seemed to do an even better job than your previous hygienist. The cleaning didn't hurt at all, and your gums felt great afterward, even though they sometimes hurt after your appointments.

--**But in November 2012, at your first appointment after the presidential election**, you had a painful cleaning, and finished 45 minutes later than you planned. Dr. Hall also made you buy a battery-powered toothbrush from him, just to make sure you would use it.

*Based on your past experiences, what would you expect your next visit to Dr. Hall to be like?*

**How prompt will the appointment be?**

*	*	*	*	*	*	*
Not at all prompt						Extremely prompt

**How attentive will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all attentive						Extremely attentive

**How friendly will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all friendly						Extremely friendly





*Generally negative, next-visit condition:*

### Visiting the Dentist

Imagine that you regularly visit your dentist, Dr. Hall, for check-ups and other appointments. You don't really care for him or his practice, which is unfortunate, because he is the only dentist in town who is covered by your insurance. Here is what happened on your last five appointments:

-- **In November 2010**, Dr. Hall kept you waiting for 45 minutes after your cleaning was done so he could take a look at your teeth. He only spent 2 minutes checking them before he left again. You ended up being late for a meeting afterward.

-- **In May 2011**, you got there on time, only to learn that they had accidentally cancelled your appointment and no longer had room to see you. You had to come back for your cleaning a week and a half later when they could squeeze you in.

-- **In November 2011**, they mixed up your file with someone else's and lost your x-rays, causing a great deal of confusion. Luckily the hygienist caught the mistake before they had to take new x-rays, which wouldn't have been covered by your insurance.

-- **In May 2012**, you had a new hygienist clean your teeth. She seemed to do an okay job, but she was not very gentle at all, and your gums hurt for a week after the appointment.

--**But in November 2012, at your appointment around the time of the presidential election**, you had a painless cleaning, and finished 15 minutes earlier than you planned. Dr. Hall also threw in a battery-powered toothbrush at no charge, just to make sure you would use it.

*Based on your past experiences, what would you expect your next visit to Dr. Hall to be like?*

**How prompt will the appointment be?**

*	*	*	*	*	*	*
Not at all prompt						Extremely prompt

**How attentive will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all attentive						Extremely attentive

**How friendly will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all friendly						Extremely friendly

**How painful will the next appointment be?**

*	*	*	*	*	*	*
Not at all painful						Extremely painful

**How likely would you be to recommend Dr. Hall to someone who is looking for a dentist?**

*	*	*	*	*	*	*
I would definitely NOT recommend Dr. Hall						I would definitely recommend Dr. Hall

*Generally positive, next-visit condition:*

### Visiting the Dentist

Imagine that you regularly visit your dentist, Dr. Hall, for check-ups and other appointments. You really like him and his practice, which is fortunate, because he is the only dentist in town who is covered by your insurance. Here is what happened on your last five appointments:

-- **In November 2010**, Dr. Hall made sure to check in on you and take a look at your teeth, even though he was scheduled to start a long procedure in the middle of your appointment. This meant you got finished 15 minutes early.

-- **In May 2011**, you realized at the last minute that you had a conflict that meant you couldn't make your scheduled time. They were great about rescheduling you for the next week, when your schedule was more open.

-- **In November 2011**, Dr. Hall thought that you might need some sealant on your teeth to prevent cavities. He applied it without charging you or your insurance for it.

-- **In May 2012**, you had a new hygienist clean your teeth. She seemed to do an even better job than your previous hygienist. The cleaning didn't hurt at all, and your gums felt great afterward, even though they sometimes hurt after your appointments.

--**But in November 2012, at your appointment around the time of the presidential election**, you had a painful cleaning, and finished 45 minutes later than you planned. Dr. Hall also made you buy a battery-powered toothbrush from him, just to make sure you would use it.

*Based on your past experiences, what would you expect your next visit to Dr. Hall to be like?*

**How prompt will the appointment be?**

*	*	*	*	*	*	*
Not at all prompt						Extremely prompt

**How attentive will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all attentive						Extremely attentive

**How friendly will Dr. Hall and his practice be?**

*	*	*	*	*	*	*
Not at all friendly						Extremely friendly



*EXPERIMENT 4: NEW COFFEE FLAVORS*

*Phantom-first, final condition:*

**Please imagine the following scenario, and answer the questions that follow.**

**Your Favorite Coffee Shop**

**You have a favorite coffee shop in town. You like their drink selection, and you think the staff is very friendly and talented. They seem to work hard to make all their customers feel appreciated. You go there a lot, making multiple stops every week.**

- **On December 26th**, your normal drink was even better than usual; the balance of ingredients was just perfect.
- **On December 27th**, the cashier didn't charge you for your drink at all, to thank you for being a loyal customer.
- Then, **on December 29th**, the barista snuck your drink to the head of the line (ahead of 4 other people) because she could tell you were in a hurry.
- **On December 30th**, you bought a cookie to go with your usual drink, and it was the tastiest thing you'd eaten in a long time. The cashier also upsized your drink to 20 ounces for free.
- **On your first visit during their weeklong "New Year, New Flavors" event, on January 2nd**, they forgot your drink order, so you had to wait an extra 10 minutes, and they gave you a 12-ounce drink even though you paid for 16 ounces. To top it all off, your usual drink wasn't even very good.

***Based on these experiences, what would you expect your experience at the coffee shop to be like the next time you go, on January 5th?***

**My drink on that day would be...**

*	*	*	*	*	*	*
<b>The worst drink ever</b>						<b>The best drink ever</b>

**The food on that day would be...**

*	*	*	*	*	*	*
<b>The worst food ever</b>						<b>The best food ever</b>

**The service on that day would be...**

*	*	*	*	*	*	*
<b>The worst service ever</b>						<b>The best service ever</b>

**My overall experience of the shop on that day would be...**

*	*	*	*	*	*	*
<b>Extremely negative</b>						<b>Extremely positive</b>

*Phantom-first, third condition:*

**Please imagine the following scenario, and answer the questions that follow.**

### Your Favorite Coffee Shop

You have a favorite coffee shop in town. You like their drink selection, and you think the staff is very friendly and talented. They seem to work hard to make all their customers feel appreciated. You go there a lot, making multiple stops every week.

- **On December 29th**, your normal drink was even better than usual; the balance of ingredients was just perfect.
- **On December 30th**, the cashier didn't charge you for your drink at all, to thank you for being a loyal customer.
- **On your first visit during their weeklong "New Year, New Flavors" event, on January 2nd**, they forgot your drink order, so you had to wait an extra 10 minutes, and they gave you a 12-ounce drink even though you paid for 16 ounces. To top it all off, your usual drink wasn't even very good.
- **On January 3rd**, you bought a cookie to go with your usual drink, and it was the tastiest thing you'd eaten in a long time. The cashier also upsized your drink to 20 ounces for free.
- Then, **on January 4th**, the barista snuck your drink to the head of the line (ahead of 4 other people) because she could tell you were in a hurry.

**Based on these experiences, what would you expect your experience at the coffee shop to be like the next time you go, on January 5th?**

**My drink on that day would be...**

*	*	*	*	*	*	*
The worst drink ever						The best drink ever

**The food on that day would be...**

*	*	*	*	*	*	*
The worst food ever						The best food ever

**The service on that day would be...**

*	*	*	*	*	*	*
The worst service ever						The best service ever

**My overall experience of the shop on that day would be...**

*	*	*	*	*	*	*
Extremely negative						Extremely positive

*Next-visit, final condition:*

**Please imagine the following scenario, and answer the questions that follow.**

### Your Favorite Coffee Shop

You have a favorite coffee shop in town. You like their drink selection, and you think the staff is very friendly and talented. They seem to work hard to make all their customers feel appreciated. You go there a lot, making multiple stops every week.

- **On December 26th**, your normal drink was even better than usual; the balance of ingredients was just perfect.
- **On December 27th**, the cashier didn't charge you for your drink at all, to thank you for being a loyal customer.
- Then, **on December 29th**, the barista snuck your drink to the head of the line (ahead of 4 other people) because she could tell you were in a hurry.
- **On December 30th**, you bought a cookie to go with your usual drink, and it was the tastiest thing you'd eaten in a long time. The cashier also upsized your drink to 20 ounces for free.
- **On a visit during their weeklong "Flavors of 2013" event, on January 2nd**, they forgot your drink order, so you had to wait an extra 10 minutes, and they gave you a 12-ounce drink even though you paid for 16 ounces. To top it all off, your usual drink wasn't even very good.

**Based on these experiences, what would you expect your experience at the coffee shop to be like the next time you go, on January 5th?**

**My drink on that day would be...**

*	*	*	*	*	*	*
The worst drink ever						The best drink ever

**The food on that day would be...**

*	*	*	*	*	*	*
The worst food ever						The best food ever

**The service on that day would be...**

*	*	*	*	*	*	*
The worst service ever						The best service ever

**My overall experience of the shop on that day would be...**

*	*	*	*	*	*	*
Extremely negative						Extremely positive

*Next-visit, third condition:*

**Please imagine the following scenario, and answer the questions that follow.**

### Your Favorite Coffee Shop

You have a favorite coffee shop in town. You like their drink selection, and you think the staff is very friendly and talented. They seem to work hard to make all their customers feel appreciated. You go there a lot, making multiple stops every week.

- **On December 29th**, your normal drink was even better than usual; the balance of ingredients was just perfect.
- **On December 30th**, the cashier didn't charge you for your drink at all, to thank you for being a loyal customer.
- **On a visit during their weeklong "Flavors of 2013" event, on January 2nd**, they forgot your drink order, so you had to wait an extra 10 minutes, and they gave you a 12-ounce drink even though you paid for 16 ounces. To top it all off, your usual drink wasn't even very good.
- **On January 3rd**, you bought a cookie to go with your usual drink, and it was the tastiest thing you'd eaten in a long time. The cashier also upsized your drink to 20 ounces for free.
- Then, **on January 4th**, the barista snuck your drink to the head of the line (ahead of 4 other people) because she could tell you were in a hurry.

**Based on these experiences, what would you expect your experience at the coffee shop to be like the next time you go, on January 5th?**

**My drink on that day would be...**

*	*	*	*	*	*	*
The worst drink ever						The best drink ever

**The food on that day would be...**

*	*	*	*	*	*	*
The worst food ever						The best food ever

**The service on that day would be...**

*	*	*	*	*	*	*
The worst service ever						The best service ever

**My overall experience of the shop on that day would be...**

*	*	*	*	*	*	*
Extremely negative						Extremely positive



*Memory questions:*

**We would also like to know the kinds of information people remember about scenarios like this. Please answer the questions below as best you can.**

**In particular, one of the experiences at the coffee shop was fairly negative. We have some questions about that negative experience:**

**How many minutes extra did you have to wait when they forgot your order? \_\_\_\_\_**

**What size drink did they give you by mistake? \_\_\_\_\_**

**On what date did that negative experience take place?**

**Month: \_\_\_\_\_**

**Day: \_\_\_\_\_**

*EXPERIMENT 5: A FIRST IS THE WORST*

Imagine that you are going on a two-week vacation to Paris. You would like to spend most of your time there **walking around the city** to get to museums and restaurants, seeing the **gardens and monuments**, and **strolling along the river**, so you pay careful attention to what the weather will be like. Each morning, you check the Paris weather forecast for the day, so that you know what sort of clothes to wear and what sorts of activities you'll be able to do.

On each of the first five days you check the weather, **the weather in Paris is beautiful**. On Sunday, for instance, the skies are clear and sunny, and the high is 72. Monday is mostly sunny and 70, Tuesday is sunnier and warmer, with a high of 75, Wednesday is partly sunny and 72, and Thursday is mostly sunny and 73. It's perfect weather for strolling the streets and gardens of Paris.

On Friday, however, the skies are gray, it **rains all day**, and the high is only 62.

***Now imagine the timing of this vacation going in two different ways:***

In **Vacation #1**, you first arrive on Sunday. You check the weather on the first five days of your trip, and every day, the weather is lovely—Sunday through Thursday are all sunny and warm. However, you wake up in Paris for the **sixth day** of your trip, and it's a miserable rainy day.

In **Vacation #2**, you will first arrive on Friday. You check the weather on the five days leading up to your trip, and every day, the weather is lovely—Sunday through Thursday are all sunny and warm. However, you arrive in Paris on Friday for the **first day** of your trip, and it's a miserable rainy day.

**We want to know how your impressions of these two vacations would depend on their timing. Please answer the questions below based on your reaction to what you just read.**

For which of these two vacations would you be more likely to characterize **Friday's cool and rainy weather as a sign or an omen** for the rest of the vacation?

\*                    \*                    \*                    \*                    \*

*I would  
definitely be  
more likely to  
feel that  
Friday's cool  
and rainy  
weather is an  
omen for the  
rest of the trip in  
Vacation #1  
(Friday = 6th  
day)*

\*                    \*                    \*                    \*                    \*

*I would  
definitely be  
more likely to  
feel that  
Friday's cool  
and rainy  
weather is an  
omen for the  
rest of the trip in  
Vacation #2  
(Friday = 1st  
day)*

For which of these two vacations do you feel like the chance of rain on the next day, **Saturday**, would be higher?

*	*	*	*	*	*
<i>It would definitely be more likely to rain on Saturday in Vacation #1 (Friday = 6th day)</i>					<i>It would definitely be more likely to rain on Saturday in Vacation #2 (Friday = 1st day)</i>

For which of these two vacations do you feel like the high temperature on the next day, **Saturday**, would be warmer?

*	*	*	*	*	*
<i>The high temperature on Saturday would definitely be warmer in Vacation #1 (Friday = 6th day)</i>					<i>The high temperature on Saturday would definitely be warmer in Vacation #2 (Friday = 1st day)</i>

For which of these two vacations do you feel like the weather would be nicer for **the rest of your trip**, from Saturday onward?

*	*	*	*	*	*
<i>The weather would definitely be nicer on the rest of the trip in Vacation #1 (Friday = 6th day)</i>					<i>The weather would definitely be nicer on the rest of the trip in Vacation #2 (Friday = 1st day)</i>

For which of these two vacations do you feel like you would be more likely to need to **adjust your plans** from Saturday onward to accommodate the weather?

*	*	*	*	*	*
<i>I would definitely be more likely to need to adjust my plans in Vacation #1 (Friday = 6th day)</i>					<i>I would definitely be more likely to need to adjust my plans in Vacation #2 (Friday = 1st day)</i>

Imagine telling the story of these two vacations. Which vacation do you feel would **make a better story**? (Note: this doesn't necessarily mean a happier story, just a story that is more interesting, compelling, or easier to tell.)

*	*	*	*	*	*
<i>I definitely feel that Vacation #1 (Friday = 6th day) would make the better story</i>					<i>I definitely feel that Vacation #2 (Friday = 1st day) would make the better story</i>

Discussion of this final question was omitted from the manuscript for space and relevance reasons. Participants believed that both vacations would make for an equally good story ( $M = 3.58$ ,  $SD = 1.99$ ;  $t(44) = .26$ ,  $p = .80$ ,  $d = .04$ , one-sample t-test versus midpoint of 3.5).

*EXPERIMENT 6: WEIGHING THE EVIDENCE*

*Phantom-first, “great hotel” first condition:*

**Imagine that you are planning a vacation with a friend and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six reviews of the hotel you are considering. Take a look at these reviews to form an impression of this particular hotel.**

Reviews submitted in 2012:				
...				
<b>Review #71</b>				
“Great hotel! I stay here every time I’m in town.” <a href="#">maggiekw</a> , Columbia, SC				
<b>Date of stay:</b> 7/31/12				
<b>Overall rating:</b> ***** <b>Value:</b> 9 <b>Location:</b> 9 <b>Cleanliness:</b> 10 <b>Review posted:</b> 8/5/12				
<b>Review #72</b>				
“This place is great. The rooms are affordable, and the location can’t be beat.” <a href="#">gobolts</a> , St. Louis, MO				
<b>Date of stay:</b> 8/3/12				
<b>Overall rating:</b> ***** <b>Value:</b> 10 <b>Location:</b> 9 <b>Cleanliness:</b> 8 <b>Review posted:</b> 8/10/12				
<b>Review #73</b>				
“Good value, good service, big rooms. Highly recommend!” <a href="#">lluv2fish</a> , Mandeville, LA				
<b>Date of stay:</b> 8/28/12				
<b>Overall rating:</b> ***** <b>Value:</b> 9 <b>Location:</b> 9 <b>Cleanliness:</b> 9 <b>Review posted:</b> 9/14/12				
<b>Review #74</b>				
“I love the free breakfast in the morning!” <a href="#">dylanfan85</a> , Tempe, AZ				
<b>Date of stay:</b> 9/12/12				
<b>Overall rating:</b> **** <b>Value:</b> 10 <b>Location:</b> 8 <b>Cleanliness:</b> 8 <b>Review posted:</b> 9/15/12				
<b>Review #75</b>				
“Really nice rooms. Loved the free wi-fi!” <a href="#">gibson5000</a> , Philadelphia, PA				
<b>Date of stay:</b> 11/19/12				
<b>Overall rating:</b> ***** <b>Value:</b> 9 <b>Location:</b> 10 <b>Cleanliness:</b> 9 <b>Review posted:</b> 11/30/12				
Reviews submitted in 2013:				
<b>Review #1</b>				
“This place was pretty bad. I don’t know what the other reviewers were talking about. I wouldn’t go back.” <a href="#">mlewis89</a> , Atlanta, GA				
<b>Date of stay:</b> 12/21/12				
<b>Overall rating:</b> * <b>Value:</b> 4 <b>Location:</b> 6 <b>Cleanliness:</b> 3 <b>Review posted:</b> 1/2/13				
...				

We want to know *how much each review would matter to you* as you evaluate this hotel.

Please rank the six reviews you saw as to how much they would influence your impression of the hotel.

To do this, please put the reviews you saw in the order you feel is appropriate, so that the review you would consider to be the most influential review is ranked number 1, the review you would consider second-most influential is ranked number 2, and so on, so that the one you would consider to be the least influential review is ranked number 6. Enter the appropriate number in the blank to the left of each review.

<b>Reviews submitted in 2012:</b>					
...					
<b>Review #71</b>					
"Great hotel! I stay here every time I'm in town." <a href="#">maggiekw</a> , Columbia, SC					
Date of stay: 7/31/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/12					
<b>Review #72</b>					
"This place is great. The rooms are affordable, and the location can't be beat." <a href="#">gobolts</a> , St. Louis, MO					
Date of stay: 8/3/12					
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/12					
<b>Review #73</b>					
"Good value, good service, big rooms. Highly recommend!" <a href="#">lluv2fish</a> , Mandeville, LA					
Date of stay: 8/28/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/12					
<b>Review #74</b>					
"I love the free breakfast in the morning!" <a href="#">dylanfan85</a> , Tempe, AZ					
Date of stay: 9/12/12					
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/12					
<b>Review #75</b>					
"Really nice rooms. Loved the free wi-fi!" <a href="#">gibson5000</a> , Philadelphia, PA					
Date of stay: 11/19/12					
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/12					
<b>Reviews submitted in 2013:</b>					
<b>Review #1</b>					
"This place was pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." <a href="#">mlewis89</a> , Atlanta, GA					
Date of stay: 12/21/12					
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 1/2/13					
...					

When you've finished ranking the reviews above from 1 (most influential) to 6 (least influential), please click below to continue with this survey. Thanks!

*{page break}*

We would also like to know the kinds of information people remember about scenarios like this. Please answer the questions below as best you can.

In particular, one of the reviews of the hotel was fairly negative. We have some questions about that negative review:

Which of the following was the reviewer's screen name?

joeyjoejoejr

mlewis89

thegirl12

Where was the reviewer from?

Atlanta, GA

Carlsbad, CA

Gainesville, FL

How did the reviewer describe the room?

"too hot"

"very loud"

"pretty bad"

*Phantom-first, “good value” first condition:*

Imagine that you are planning a vacation with a friend and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six reviews of the hotel you are considering. Take a look at these reviews to form an impression of this particular hotel.

Reviews submitted in 2012:				
...				
<b>Review #71</b>	“Good value, good service, big rooms. Highly recommend!” <a href="#">lluv2fish</a> , Mandeville, LA			
<b>Date of stay:</b>	7/31/12			
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 9	<b>Cleanliness:</b> 9
				<b>Review posted:</b> 8/5/12
<b>Review #72</b>	“This place is great. The rooms are affordable, and the location can’t be beat.” <a href="#">gobolts</a> , St. Louis, MO			
<b>Date of stay:</b>	8/3/12			
<b>Overall rating:</b>	*****	<b>Value:</b> 10	<b>Location:</b> 9	<b>Cleanliness:</b> 8
				<b>Review posted:</b> 8/10/12
<b>Review #73</b>	“Great hotel! I stay here every time I’m in town.” <a href="#">maggiekw</a> , Columbia, SC			
<b>Date of stay:</b>	8/28/12			
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 9	<b>Cleanliness:</b> 10
				<b>Review posted:</b> 9/14/12
<b>Review #74</b>	“I love the free breakfast in the morning!” <a href="#">dylanfan85</a> , Tempe, AZ			
<b>Date of stay:</b>	9/12/12			
<b>Overall rating:</b>	****	<b>Value:</b> 10	<b>Location:</b> 8	<b>Cleanliness:</b> 8
				<b>Review posted:</b> 9/15/12
<b>Review #75</b>	“Really nice rooms. Loved the free wi-fi!” <a href="#">gibson5000</a> , Philadelphia, PA			
<b>Date of stay:</b>	11/19/12			
<b>Overall rating:</b>	*****	<b>Value:</b> 9	<b>Location:</b> 10	<b>Cleanliness:</b> 9
				<b>Review posted:</b> 11/30/12
Reviews submitted in 2013:				
<b>Review #1</b>	“This place was pretty bad. I don’t know what the other reviewers were talking about. I wouldn’t go back.” <a href="#">mlewis89</a> , Atlanta, GA			
<b>Date of stay:</b>	12/21/12			
<b>Overall rating:</b>	*	<b>Value:</b> 4	<b>Location:</b> 6	<b>Cleanliness:</b> 3
				<b>Review posted:</b> 1/2/13
...				

We want to know *how much each review would matter to you* as you evaluate this hotel.

Please rank the six reviews you saw as to how much they would influence your impression of the hotel.

To do this, please put the reviews you saw in the order you feel is appropriate, so that the review you would consider to be the most influential review is ranked number 1, the review you would consider second-most influential is ranked number 2, and so on, so that the one you would consider to be the least influential review is ranked number 6. Enter the appropriate number in the blank to the left of each review.

<b>Reviews submitted in 2012:</b>					
...					
<b>Review #71</b>					
"Good value, good service, big rooms. Highly recommend!" lluv2fish, Mandeville, LA					
Date of stay: 7/31/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 8/5/12					
<b>Review #72</b>					
"This place is great. The rooms are affordable, and the location can't be beat." gobolts, St. Louis, MO					
Date of stay: 8/3/12					
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/12					
<b>Review #73</b>					
"Great hotel! I stay here every time I'm in town." maggiew, Columbia, SC					
Date of stay: 8/28/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 9/14/12					
<b>Review #74</b>					
"I love the free breakfast in the morning!" dylanfan85, Tempe, AZ					
Date of stay: 9/12/12					
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/12					
<b>Review #75</b>					
"Really nice rooms. Loved the free wi-fi!" gibson5000, Philadelphia, PA					
Date of stay: 11/19/12					
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/12					
<b>Reviews submitted in 2013:</b>					
<b>Review #1</b>					
"This place was pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." mlewis89, Atlanta, GA					
Date of stay: 12/21/12					
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 1/2/13					
...					

When you've finished ranking the reviews above from 1 (most influential) to 6 (least influential), please click below to continue with this survey. Thanks!



*{page break}*

We would also like to know the kinds of information people remember about scenarios like this. Please answer the questions below as best you can.

In particular, one of the reviews of the hotel was fairly negative. We have some questions about that negative review:

Which of the following was the reviewer's screen name?

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mlewis89

thegirl12

Where was the reviewer from?

Atlanta, GA

Carlsbad, CA

Gainesville, FL

How did the reviewer describe the room?

"too hot"

"very loud"

"pretty bad"

Control, “great hotel” first condition:

Imagine that you are planning a vacation with a friend and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six reviews of the hotel you are considering. Take a look at these reviews to form an impression of this particular hotel.

Reviews 51-75:				
...				
<b>Review #71</b>				
“Great hotel! I stay here every time I’m in town.” <a href="#">maggiekw</a> , Columbia, SC				
Date of stay: 7/31/12				
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/12				
<b>Review #72</b>				
“This place is great. The rooms are affordable, and the location can’t be beat.” <a href="#">gobolts</a> , St. Louis, MO				
Date of stay: 8/3/12				
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/12				
<b>Review #73</b>				
“Good value, good service, big rooms. Highly recommend!” <a href="#">lluv2fish</a> , Mandeville, LA				
Date of stay: 8/28/12				
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/12				
<b>Review #74</b>				
“I love the free breakfast in the morning!” <a href="#">dylanfan85</a> , Tempe, AZ				
Date of stay: 9/12/12				
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/12				
<b>Review #75</b>				
“Really nice rooms. Loved the free wi-fi!” <a href="#">gibson5000</a> , Philadelphia, PA				
Date of stay: 11/19/12				
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/12				
Reviews 76-100:				
<b>Review #76</b>				
“This place was pretty bad. I don’t know what the other reviewers were talking about. I wouldn’t go back.” <a href="#">mlewis89</a> , Atlanta, GA				
Date of stay: 12/21/12				
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 12/30/12				
...				

We want to know *how much each review would matter to you* as you evaluate this hotel.

Please rank the six reviews you saw as to how much they would influence your impression of the hotel.

To do this, please put the reviews you saw in the order you feel is appropriate, so that the review you would consider to be the most influential review is ranked number 1, the review you would consider second-most influential is ranked number 2, and so on, so that the one you would consider to be the least influential review is ranked number 6. Enter the appropriate number in the blank to the left of each review.

<b>Reviews 51-75:</b>					
...					
<b>Review #71</b>					
"Great hotel! I stay here every time I'm in town." <a href="#">maggiekw</a> , Columbia, SC					
Date of stay: 7/31/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 8/5/12					
<b>Review #72</b>					
"This place is great. The rooms are affordable, and the location can't be beat." <a href="#">gobolts</a> , St. Louis, MO					
Date of stay: 8/3/12					
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/12					
<b>Review #73</b>					
"Good value, good service, big rooms. Highly recommend!" <a href="#">lluv2fish</a> , Mandeville, LA					
Date of stay: 8/28/12					
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 9/14/12					
<b>Review #74</b>					
"I love the free breakfast in the morning!" <a href="#">dylanfan85</a> , Tempe, AZ					
Date of stay: 9/12/12					
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/12					
<b>Review #75</b>					
"Really nice rooms. Loved the free wi-fi!" <a href="#">gibson5000</a> , Philadelphia, PA					
Date of stay: 11/19/12					
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/12					
<b>Reviews 76-100:</b>					
<b>Review #76</b>					
"This place was pretty bad. I don't know what the other reviewers were talking about. I wouldn't go back." <a href="#">mlewis89</a> , Atlanta, GA					
Date of stay: 12/21/12					
Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 12/30/12					
...					

When you've finished ranking the reviews above from 1 (most influential) to 6 (least influential), please click below to continue with this survey. Thanks!

*{page break}*

We would also like to know the kinds of information people remember about scenarios like this. Please answer the questions below as best you can.

In particular, one of the reviews of the hotel was fairly negative. We have some questions about that negative review:

Which of the following was the reviewer's screen name?

joeyjoejoejr

mlewis89

thegirl12

Where was the reviewer from?

Atlanta, GA

Carlsbad, CA

Gainesville, FL

How did the reviewer describe the room?

"too hot"

"very loud"

"pretty bad"

Control, “great value” first condition:

Imagine that you are planning a vacation with a friend and are looking for a hotel. You find one in your price range, so you look up the reviews to see what other travelers thought. Here are six reviews of the hotel you are considering. Take a look at these reviews to form an impression of this particular hotel.

Reviews 51-75:				
...				
<b>Review #71</b>				
“Good value, good service, big rooms. Highly recommend!” <a href="#">llov2fish</a> , Mandeville, LA				
Date of stay: 7/31/12				
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 9 Review posted: 8/5/12				
<b>Review #72</b>				
“This place is great. The rooms are affordable, and the location can’t be beat.” <a href="#">gobolts</a> , St. Louis, MO				
Date of stay: 8/3/12				
Overall rating: ***** Value: 10 Location: 9 Cleanliness: 8 Review posted: 8/10/12				
<b>Review #73</b>				
“Great hotel! I stay here every time I’m in town.” <a href="#">maggiekw</a> , Columbia, SC				
Date of stay: 8/28/12				
Overall rating: ***** Value: 9 Location: 9 Cleanliness: 10 Review posted: 9/14/12				
<b>Review #74</b>				
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Overall rating: * Value: 4 Location: 6 Cleanliness: 3 Review posted: 12/30/12				
...				

We want to know *how much each review would matter to you* as you evaluate this hotel.

Please rank the six reviews you saw as to how much they would influence your impression of the hotel.

To do this, please put the reviews you saw in the order you feel is appropriate, so that the review you would consider to be the most influential review is ranked number 1, the review you would consider second-most influential is ranked number 2, and so on, so that the one you would consider to be the least influential review is ranked number 6. Enter the appropriate number in the blank to the left of each review.

<b>Reviews 51-75:</b>					
...					
<b>Review #71</b>					
"Good value, good service, big rooms. Highly recommend!" lluv2fish, Mandeville, LA					
Date of stay: 7/31/12					
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Date of stay: 9/12/12					
Overall rating: **** Value: 10 Location: 8 Cleanliness: 8 Review posted: 9/15/12					
<b>Review #75</b>					
"Really nice rooms. Loved the free wi-fi!" gibson5000, Philadelphia, PA					
Date of stay: 11/19/12					
Overall rating: ***** Value: 9 Location: 10 Cleanliness: 9 Review posted: 11/30/12					
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